XIII. *On the classification of the* Pyralidina *of the European fauna.* By Edward Meyrick, B.A., F.Z.S.

[Read April 2nd, 1890.]

Plate XV.

When Professor Fernald was in England last year he expressed a desire that I would work out the classification of the *Pyralidina* of the European fauna. He pointed out that the generic nomenclature was in a state of great confusion, owing to the misappropriation or neglect of the names used by older authors, that, as a means to the removal of these abuses, the generic definitions required a thorough revision and correction —Lederer's classification, now nearly thirty years old, the only one based on an adequate examination of structure, is not founded on modern principles, and contains more actual errors of observation than is generally known,—and that the work was of great importance, as the classification of the species of any part of the world must always be based on a knowledge of those of the European region, which were the first worked out. Thus he himself stood in immediate need of the work for his forthcoming paper on the *Pyralidina* of North America. This paper has been written in accordance with his request, and he concurs in the general principles on which I have worked, and agrees with the main results obtained, although he is of course in no way committed to an entire approval of all the details.

The species here included are those which inhabit the region of the European fauna in the sense in which the term is used by Staudinger in his Catalogue, except that I have excluded the Labradorian species; if these are included, a large part of Canada has an equally good claim, and they will moreover, in any case, be worked out by Professor Fernald. The region as so defined is a reasonably convenient one for delimitation, but I would not be understood to express any belief in its

natural separation; on the contrary, I cannot but think that no natural line of separation between Eastern Siberia on the one hand, and Japan and North China on the other, is capable of being drawn. Probably, however, on accurate investigation, we should find that there is no natural line anywhere.

It will be well to mention here some of the general rules of classification. No genus, family, or higher group, is tenable unless distinctly separable from all others by points of structure, which, whether singly or in conjunction, are capable of accurate definition. If a systematist is not able to define by a clear and not simply comparative character the distinction between two genera, he is bound to merge them together; thus, to say that in one the cell is short and in another long, is no sufficient definition; to say that in one the cell is less than one-third of the wing in length, and in another more than one-third, is sufficient, if found constant and clearly perceptible, but in practice it would probably be a very bad character, as probably some species would be transitional. Even where transitional forms are not known, it will always be necessary to use judgment as to whether the distinction employed is of such a character as to be likely to hold good in the event of the discovery of additional species. But even where there is a good and definable point of distinction, it does not follow that the genera are to be maintained; where genera are small and numerous, it becomes intrinsically undesirable to multiply them, and in such a case, if two small genera agree in nearly all structural characters, resemble one another superficially, are apparently closely connected genealogically, and finally are capable of accurate definition and distinction as a single whole, then they ought in general to be united. Many structural characters are variable, either in different specimens of the same species, or sometimes in a transitional series of closely allied species. I hope shortly to give a paper on the classification of the European *Geometrina*, and shall then give some remarkable and, I believe, unprecedented statistics of the variation of structural characters, but many instances will be found in the following genera. The same point of structure will often be found available as a good and reliable distinguishing character in one instance, and not in another; this can

never be determined except by actual consideration of the particular circumstances. Nor can it be said beforehand what characters are likely to be good; perhaps the most suspicious are tufts of hairs, especially when developed as secondary sexual characters, when they are often unreliable.

In the use of generic names I have followed the now generally received practice of adopting the generic name under which a species of the genus was earliest described, except where such name has been preoccupied in a different sense by another author; subsequent limitations being accepted so far as they restrict the meaning of a generic name in accordance with my definition of the genus. The misuse of some older names is largely due to an indiscriminate following of Treitschke. To give one or two conspicuous instances, the genus *Botys* was founded by Latreille to include two species only, now passing as *Lythria purpuraria* and *Hydrocampa nymphæata*; it must be long since either of these species was included by any writer in *Botys*, but clearly one or other must be the actual type; I hold it to be *purpuraria*. *Scopula*, Schrk., was founded to include *stratiotata* and *dentalis*, and is a synonym of *Nymphula*. Both these names were subsequently used by Treitschke in a quite different sense, for which there is no authority. *Alucita* and *Pterophorus* are also instances of generic titles much abused. In some instances a generic name has been orthographically wrongly written in the first instance; I have concurred in the prevalent view that, in the interests of permanence, such an error is not to be corrected, as it opens up an unending possibility of confusion, except where it is a mere printer's error for which there is evidence (see *Psammotis*). In specific names the necessity for absolute literal permanence does not exist to the same acute degree, and corrections may, I think, be sometimes made here, when the error is slight and the intention of the writer obvious. But I hold that it conclusively follows from this that, if a generic name is not liable to modification in the slightest degree, then any original difference, even one of the termination only, is sufficient to constitute two names distinct for separate use. Indeed, as it has hardly ever been proposed to alter the termination of any generic name, there is no probability of con-

fusion. Hence I retain *Euchromius*, Gn., although there is a previously existing genus *Euchromia*, Hb. ; *Cynæda*, Hb., although there is an earlier *Cynædus*, Gron.; *Notarcha*, Meyr., notwithstanding the existence of *Notarchus*, Cuv. This is obvious, for if we once begin to alter on the general ground of nearness, there is again no limit to the possibility of change, as no actual line of demarcation can be drawn between forms which are too near, and those which are near but not too near; thus, to quote an actual instance, Lederer considers *Achatodes* and *Agathodes* to be too near, though originating from totally different root-words. No doubt such names as those mentioned above ought not originally to have been formed, just as names which offend against orthography ought not to have been formed; but once formed, they must be maintained if we are to be logical. It is expressly urged by those who maintain the literal permanence of original generic names that the form is everything and the meaning nothing, and the application of this principle is here undoubted.

In the following list of species I have ventured to mention some at present unpublished species of Dr. Staudinger (marked List XXXIII), which, as he says, are contained in all the principal collections under the names employed. It is, I admit, a reprehensible practice, but as the species are really pretty well known, and are also well-marked and distinct, I thought it best to acknowledge their existence and fix their classification. In the specific nomenclature I have not entered at all into the subject of synonymy or correction of names, as it does not appear to bear on the present subject; I have therefore simply employed the name in general use, and have not mentioned synonyms except in a few instances, where I have merged established species. Neither have I troubled to investigate the specific distinctness of some doubtful forms. Those species marked with an asterisk (*) are unknown to me; I am not at present able to visit continental collections, and have not found it possible to obtain a sight of them by other means; fortunately they include hardly any species of importance in generic nomenclature; my paper may therefore be regarded as practically complete. Although only my conclusions as to the European fauna are given here, it must be understood that I have re-examined for

the purposes of this paper my entire exotic collection, and that these conclusions are based upon and are consistent with the whole of this material; hence my investigation is not liable to the charge of incompleteness in this particular.

PYRALIDINA.

Ocelli usually present. Tongue usually well-developed. Maxillary palpi usually well-developed. Fore wings with vein 1 usually simple, sometimes more or less furcate at base, 5 more or less closely approximated to 4 or sometimes remote yet nearer 4 than 7, 8 and 9 stalked, or separate in *Siculodidæ* and *Agdistis* only, 11 from beyond middle of cell. Hind wings with frenulum developed, veins 1*a*, 1*b*, 1*c* all present, simple, or 1*a* sometimes absent (*Pterophoridæ* and *Orneodidæ*), 5 more or less closely approximated to 4 or sometimes remote yet nearer 4 than 7, 6 and 7 stalked or sometimes rising separate, 8 rising free and remote from cell, gradually descending so as to be closely approximated to 7 for a short distance near beyond its origin, or more usually anastomosing with it, thence rapidly diverging again.

This group has no direct relationship to the *Noctuina* and *Geometrina*, next which it is usually placed; nor yet to the *Tortricina* and *Tineina*, which constitute a radically different line of development. The structure of vein 8 of the hind wings is sufficient to distinguish it from them all. Its real origin is from an early form of the *Bombycina*, probably approaching *Heterogenea* more nearly than any form known to me, though *Heterogenea* will not in fact fulfil all the requirements of the ancestral form; probably also there is some affinity with *Thyris*. The connecting-link and earliest form of existing *Pyralidina* appears to be the *Siculodidæ*, a family not found within the region of the European fauna, in which veins 8 and 9 of the fore wings are usually separate though occasionally stalked.

The ocelli are often stated by systematic writers to be absent, when in fact they are only concealed by the scales; as, for example, in *Calamotropha*, where they are seen to be well-developed on removal of the scales covering them. The length of the antennæ is given in terms of the length of the fore wings; thus antennæ three-fourths means that they are equal in length to three-fourths of the extreme length of the fore wings. The length of the ciliations of the antennæ is given in terms

of the breadth of the stalk of the antennæ; thus ciliated ($\frac{2}{3}$) means that the ciliations are equal in length to two-thirds of the breadth of the antennal stalk at the corresponding point. The antennæ are said to be ciliated when they are furnished with short hairs arranged in a single or double regular series. When these are long, they are usually collected into small fascicles or bundles at the joints, but are still arranged in a regular series. They are often very short, and only perceptible with a good lens, but it is extremely rare for them to be quite absent in the ♂, though often said to be so by careless observers. Sometimes in such a case the antennæ are called pubescent, but this is again quite a wrong use of the term, which should only be used where the short hairs (pubescence) are distributed over the whole surface of the antennal stalk, not confined to a regular series; this structure is unusual. The maxillary palpi have been much overlooked, even Lederer declaring them absent in not a few cases where they are fairly developed; in nearly all the families they are almost always present. When very short they lie at the base of the tongue between the labial palpi, and are thus hard to perceive. The abdomen of the ♂ is usually furnished with a more or less developed exterior apical tuft, called the anal tuft; but sometimes, as in *Margaronia*, there is a dense exsertible interior tuft, attached to the genitalia, which I have called the genital tuft. I have not used the genital organs as generic characters, because, after examining a good many species for this paper, I came to the conclusion that those structures which I had previously thought of value were not constant either in families or genera; often in closely allied species quite extraordinary differences occur; thus *Talis* may be quoted as an instance of a genus where all the species show a remarkable range of difference in the structure of these organs. I cannot, in fact, give a single case of two natural genera which could be separated by a point of structure of the genitalia themselves. In the fore wings vein 1*a*, the lowest of the normal three free inner-marginal veins, at first diverges considerably from vein 1*b*, but presently curves round and runs directly into 1*b*, where it terminates; this structure appears constant, but is often hard to observe, because the vein becomes extremely faint and fine towards its termination. This

curious structure appears to be characteristic of the *Pyralidina;* at least I have never observed it in any other group, but have perhaps not searched sufficiently. Vein 1*b* is often shortly or obsoletely furcate at base in some families, especially the *Pyralididæ;* this was certainly an aboriginal character of the whole group, but has now disappeared very generally; in those genera where it is found it appears to be quite unreliable as a character for definition, being frequently present in some species, and not in others; I have therefore not employed it as a generic character for separation. Vein 1*c* is obsolete. In the hind wings veins 1*a*, 1*b*, 1*c* are all present; but in some of the genera with fissured wings, where the neuration becomes extremely degraded, one or more of these veins tend to disappear. In neither fore wings nor hind wings are there any additional bars or veins, such as sometimes exist as a survival in some ancestral forms (*e. g.*, the *Hepialidæ*). The relative breadth of the hind wings is given in terms of the greatest breadth of the fore wings; thus hind wings over 1 means that the hind wings are broader than the fore wings.

It will be seen that I have sunk the *Epipaschiadæ* in the *Pyralididæ*, and the *Hydrocampidæ* and *Scopariadæ* in the *Pyraustidæ*, having found that on an extended comparison no distinctive character could in these cases be relied on as constant.

The generic classification of the *Phycitidæ* and *Galleriadæ* is not given here; M. Ragonot has been for many years at work on these families, and it would seem wise to wait for the publication of his results, of which a part is promised this year. Should I find that his views do not satisfy me, it will then be time enough to publish my own.

I desire to record my gratitude to those entomologists who have kindly assisted me with specimens or otherwise; particularly to Prof. Fernald, who has been good enough to furnish me with his valuable opinion on many troublesome points, and to Mr. Geo. Baker, who enabled me to have the advantage of inspecting his extensive collection of *Crambidæ*, and Dr. Jordan's equally full collection of *Pterophoridæ*.

Tabulation of Families.

1.	Fore wings and hind wings six-cleft	8. Orneodidæ.
	Fore wings and hind wings not six-cleft	2.
2.	Hind wings with well-defined pecten of hairs on lower margin of cell towards base	3.
	Hind wings without defined pecten on margin of cell	5.
3.	Fore wings with vein 7 absent	4. Phycitidæ.
	Fore wings with vein 7 present	4.
4.	Maxillary palpi triangularly scaled	6. Crambidæ.
	Maxillary palpi not triangular	5. Galleriadæ.
5.	Hind wings with vein 5 remote from 4	6.
	Hind wings with vein 5 closely approximated or from point with 4	7.
6.	Hind wings with vein 8 anastomosing with 7	2. Musotimidæ.
	Hind wings with vein 8 free	7. Pterophoridæ.
7.	Fore wings with vein 7 rising out of 8	3. Pyralididæ.
	Fore wings with vein 7 separate	1. Pyraustidæ.

1. PYRAUSTIDÆ.

Ocelli distinct, or very rarely obsolete. Tongue well-developed, or rarely obsolete. Maxillary palpi well-developed, or rarely rudimentary. Fore wings with vein 1 simple or rarely obsoletely furcate at base, 4 and 5 closely approximated at base or rarely stalked, 7 separate from 8, 8 and 9 stalked. Hind wings without defined pecten of hairs on lower margin of cell (but sometimes with loose scattered hairs), veins 4 and 5 closely approximated at base or from a point or stalked, 7 rising out of 6 near base or rarely separate but closely approximated, anastomosing with 8.

The ancestral form of this family is most nearly represented by *Scoparia* and *Heliothela*, at which point a common origin with the *Crambidæ* is indicated. From this point there appear to be two main lines of descent; one by way of *Titanio*, *Loxostege*, *Pyrausta*, *Notarcha*, to *Margaronia*; the other by way of *Metasia*, *Hydrocampa*, *Schœnobius*, to *Acentropus*. The *Phlyctænia* group is a lateral branch from *Pyrausta*, and the group of *Euclasta* and *Nausinoe* a lateral branch from *Metasia*. It will be found that on this scheme the remaining genera here given can be easily fitted in as intermediate steps or short lateral offshoots; the relation of each genus is usually given under its own head.

The family is largely represented almost everywhere, but especially within the tropics, where it becomes a

dominant group, abounding in genera and species. Many species ranging into the South European or Central Asiatic regions are outlying stragglers from tropical genera, and hence many genera figure in the list which have small claim to a Palæarctic origin.

Tabulation of Genera.

1. Posterior tibiæ in ♂ with outer middle-spur rudimentary, almost obsolete .. .. 2.
   Posterior tibiæ in ♂ with outer middle-spur developed .. .. 5.
2. Fore wings with vein 10 rising out of 9 or (abnormally) coincident .. .. 3.
   Fore wings with vein 10 rising separate .. .. 4.
3. Face with acute conical horny projection .. .. 12. Sclerocona.
   Face without projection .. .. 10. Perinephela.
4. Face with short rounded prominence .. .. 11. Algedonia.
   Face without prominence .. .. 13. Philyctænia.
5. Fore wings with vein 10 rising out of 9 .. .. 6.
   Fore wings with vein 10 rising separate, rarely anastomosing with 9 .. .. 13.
6. Ocelli obsolete .. .. 46. Cataclysta.
   Ocelli distinct .. .. 7.
7. Tongue obsolete .. .. 47. Donacaula.
   Tongue developed .. .. 8.
8. Fore wings with upturned scale-pecten from vein 1 near base beneath .. .. 37. Duponchelia.
   Fore wings without pecten on vein 1 .. .. 9.
9. Fore wings in ♂ with veins 7 and 8 curved apart near base, enclosing rough depression beneath 25. Pelæa.
   Fore wings in ♂ with veins 7 and 8 normal. .. 10.
10. Posterior tibiæ in ♂ with outer middle-spur $\frac{1}{6}$ of inner .. .. 9. Eurrhypara.
    Posterior tibiæ in ♂ with outer middle-spur $\frac{1}{2}$—$\frac{2}{3}$ of inner .. .. 11.
11. Labial palpi ascending .. .. 45. Nymphula.
    Labial palpi porrected .. .. 12.
12. Antennæ $\frac{1}{2}$ to almost 1 .. .. 39. Stenia.
    Antennæ $\frac{3}{4}$ .. .. 17. Psammotis.
13. Face with more or less strong horny prominence .. 14.
    Face without horny prominence .. .. .. 18.
14. Frontal prominence with a vertical edge .. .. 21. Cornifrons.
    Frontal prominence without vertical edge .. .. 15.
15. Frontal prominence bounded beneath by a flat anteriorly emarginate plate .. .. .. 23. Titanio.
    Frontal prominence without flat plate beneath .. 16.
16. Fore wings with large scale-tooth on inner margin 24. Cynæda.
    Fore wings without large scale-tooth .. .. 17.

17. Frontal prominence conical, more or less pointed 22. Loxostege.
Frontal prominence pustule-shaped .. .. 34. Metasia.
18. Antennæ in ♂ bent, with tuft of scales on bend 35. Nacoleia.
Antennæ in ♂ without tuft .. .. .. 19.
19. Antennæ in ♂ with stalk notched above basal joint .. .. 4. Hymenia.
Antennæ in ♂ with stalk not notched .. .. 20.
20. Abdomen in ♂ with large dense exsertible genital tuft .. .. 21.
Abdomen in ♂ without such tuft .. .. .. 23.
21. Thorax in ♂ with patagia elongate, terminating in an expansible pencil of scales .. .. 3. Omiodes.
Thorax in ♂ with patagia normal .. .. 22.
22. Fore wings with vein 7 closely approximated to 9 at base only .. .. 2. Paratalanta.
Fore wings with vein 7 closely appressed to 9 on basal fourth .. .. 1. Margaronia.
23. Thorax in ♂ with patagia forming erect spreading hair-tufts .. .. 49. Scirpophaga.
Thorax in the ♂ with the patagia normal .. 24.
24. Hind wings with veins 6 and 7 separate at origin 31. Prochoristis.
Hind wings with veins 6 and 7 from a point or stalked .. .. 25.
25. Antennæ $\frac{1}{3}$—1 or more .. .. 26.
Antennæ $\frac{2}{3}$ or less .. .. 30.
26. Antennæ longer than fore wings .. .. .. 43. Euclasta.
Antennæ not longer than fore wings .. .. 27.
27. Labial palpi ascending .. .. 28.
Labial palpi porrected .. .. 29.
28. Terminal joint of labial palpi with triangular tuft in front .. .. 40. Hydriris.
Terminal joint of labial palpi not tufted .. .. 42. Nausinoe.
29. Anterior femora and tibiæ in ♂ rough-haired .. 41. Antigastra.
Anterior femora and tibiæ in ♂ not rough-haired 38. Ischnurges.
30. Thorax in ♂ with hair-pencil, covered with flat scales, from beneath hind wings .. .. 8. Pleuroptya.
Thorax in ♂ without such hair-pencil .. .. 31.
31. Labial palpi ascending .. .. 32.
Labial palpi porrected .. .. 36.
32. Terminal joint of labial palpi with triangular tuft in front .. .. 33.
Terminal joint of labial palpi not tufted .. .. 34.
33. Posterior tibiæ with outer spurs half inner .. 5. Agrotera.
Posterior tibiæ with outer spurs nearly equal inner .. .. 33. Hellula.
34. Terminal joint of palpi short, thick, obtuse .. 7. Notarcha.
Terminal joint of palpi moderate, slender, generally pointed .. .. 35.
35. Hind wings in ♂ with oval depression in cell .. 6. Satanastra.

	Hind wings in ♂ without depression	44. Hydrocampa.
36.	Labial palpi dilated towards apex	50. Acentropus.
	Labial palpi not dilated terminally	37.
37.	Maxillary palpi triangular, or with well-defined dilation towards apex	38.
	Maxillary palpi filiform, or with apex loosely penicillate	43.
38.	Terminal joint of labial palpi more or less exposed, distinct	39.
	Terminal joint of labial palpi concealed in scales of second	41.
39.	Labial palpi with second joint more or less tufted towards apex beneath	40.
	Labial palpi with scales evenly diminishing throughout	48. Schœnobius.
40.	Hind wings with veins 4 and 5 from a point or stalked	27. Scoparia.
	Hind wings with veins 4 and 5 approximated at base	26. Heliothela.
41.	Middle tibiæ in ♂ dilated, usually with tuft of hairs in groove	20. Mecyna.
	Middle tibiæ in ♂ normal	42.
42.	Maxillary palpi forming a loose spreading tuft ..	30. Mesographe.
	Maxillary palpi forming an acute projecting tuft beneath	32. Cybolomia.
43.	Head, palpi, and femora clothed with rough long hairs	15. Metaxmeste.
	Head, palpi, and femora at most with moderate projecting scales	44.
44.	Maxillary palpi nearly equal to labial	29. Evergestis.
	Maxillary palpi much shorter than labial ..	45.
45.	Terminal joint of labial palpi exposed, distinct ..	46.
	Terminal joint of labial palpi concealed in scales of second	47.
46.	Antennæ of ♂ very shortly ciliated ($\frac{1}{4}$)	28. Orenaia.
	Antennæ of ♂ ciliated with fascicles ($1\frac{1}{2}$—2) ..	36. Diasemia.
47.	Posterior tibiæ with outer spurs almost equal inner	16. Isocentris.
	Posterior tibiæ with outer spurs $\frac{1}{3}$—$\frac{2}{3}$ of inner, or rarely less	48.
48.	Fore wings in ♂ with groove near base covered above with scales	19. Microstega.
	Fore wings in ♂ without groove	49.
49.	Hind wings $1\frac{1}{3}$—$1\frac{1}{2}$	14. Nomophila.
	Hind wings hardly over 1	18. Pyrausta.

1. Margaronia, *Hb.*

Face slightly rounded, oblique; ocelli distinct; tongue developed. Antennæ four-fifths, in ♂ filiform, ciliated ($\frac{1}{3}$—1). Labial palpi

moderate, subascending, second joint with dense projecting scales beneath, often longer and forming a pointed tuft forwards, terminal joint concealed. Maxillary palpi rather short, dilated terminally with dense scales, obliquely truncate. Abdomen in ♂ with large dense exsertible genital tuft. Posterior tibiæ in ♂ with outer spurs one-sixth to one-half of inner. Fore wings with vein 7 closely approximated to 9 on basal fourth, 8 and 9 stalked, 10 closely approximated to 9 towards base. Hind wings over 1; veins 3, 4, 5 closely approximated at base, 7 out of 6 near origin, anastomosing with 8 to one-third to two-fifths.

A characteristic Indo-Malayan genus of some extent, of which stragglers are found in the warmer parts of other regions. I have united under this title *Margarodes*, Gn., and *Glyphodes*, Gn., between which I can find no structural distinction. The genera *Cydalima*, Ld., *Stemorrhages*, Ld., *Pachyarches*, Ld., *Enchocnemidia*, Ld., *Sisyrophora*, Ld., *Cryptographis*, Ld., and probably others also (besides *Chloauges*, Ld., *Pygospila*, Gn., and *Heterocnephes*, Ld., which I had already merged in the above), ought, I think, also to fall into this genus; I am acquainted with all those mentioned, and they agree in all the characters of the generic definition given above, but differ variously in the possession of tufts or scale-thickenings on the legs, antennæ, abdomen, or wings, and sometimes situations in the antennæ. These characters seem to me to be here of specific value only; the natural classification of the species of this group is not improved, but rendered more obscure, by the creation of these small unnecessary genera; and it appears to me scientifically advantageous to include them all under one, which will even then be by no means very large.

unionalis, Hb.
nigropunctalis, Brem.
quadrimaculalis, Brem.
**melaleucalis*, Ev.
**expictalis*, Christ.

2. Paratalanta, n. g.

Face rounded, oblique; ocelli distinct; tongue developed. Antennæ four-fifths, in ♂ filiform, ciliated (½—1). Labial palpi moderately long, porrected, second joint with dense projecting scales attenuated to a point forwards, terminal joint concealed. Maxillary palpi moderate or short, rather dilated with scales termi-

nally. Abdomen in ♂ long, anal segment elongate, with large dense exsertible genital tuft. Middle tibiæ in ♂ dilated, enclosing tuft of hairs in groove; posterior tibiæ with outer middle-spur one-fifth to one-half of inner, outer end-spur one-half inner. Fore wings with vein 7 closely approximated to 9 at base, 8 and 9 stalked, 10 closely approximated to 9 towards base. Hind wings $1\frac{1}{4}$—$1\frac{1}{2}$; veins 3, 4, 5 approximated at base, 7 out of 6 near origin, anastomosing with 8 to two-fifths.

Allied to *Omiodes;* at present represented only by the two following Siberian species.

ussurialis, Brem.
heterogenalis, Brem.

3. Omiodes, *Gn.*

Face somewhat rounded, oblique; ocelli distinct; tongue developed. Antennæ three-fourths to five-sixths, in ♂ filiform, ciliated ($\frac{1}{4}$—$1\frac{1}{4}$), basal joint sometimes with a slight projection of scales in front. Labial palpi moderate, arched, ascending, second joint with dense rough projecting scales beneath, terminal joint very short, obtuse. Maxillary palpi moderate, porrected, filiform or somewhat dilated with loose scales towards apex. Thorax in ♂ with patagia elongate, ending in an expansible pencil of long hair-scales; abdomen in ♂ elongate, with dense exsertible genital tuft. Posterior tibiæ with outer spurs one-third to one-half of inner. Fore wings with vein 7 approximated to 9 towards base, 8 and 9 stalked, 10 closely approximated to 9 towards base. Hind wings over 1; veins 3, 4, 5 approximated at base, 7 out of 6 near origin, anastomosing with 8 to one-third to two-fifths.

A genus of rather limited size, of which the species seem to be scattered rather indiscriminately through the Indo-Malayan region, Pacific Islands, and Central America; in the Hawaiian Islands there is a locally developed group of them. The two here given are Indian species which range into Siberia.

tristrialis, Brem.
quadrimaculalis, Koll.

4. Hymenia, *Hb.*

Face rounded, oblique; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ filiform, ciliated ($\frac{1}{4}$—$\frac{1}{3}$), basal joint in ♂ with an erect apical spine or projection of scales on inner side, stalk notched above basal joint. Labial palpi moderate, arched,

ascending, second joint with dense projecting scales beneath, terminal joint short or moderate, more or less pointed. Maxillary palpi moderate, porrected, filiform. Abdomen in ♂ with small anal tuft. Posterior tibiæ with outer spurs one-third to four-fifths of inner. Fore wings with vein 7 approximated to 9 towards base, 8 and 9 stalked, 10 closely approximated to 9 towards base. Hind wings over 1; veins 3, 4, 5 closely approximated at base, 7 out of 6 near origin, anastomosing with 8 to one-third.

Allied to *Omiodes*. An Indo-Malayan genus of limited extent; of the two following species *luctuosalis* is Indian, and ranges into Siberia; *recurvalis* is now one of the most widely distributed of insects, occurring in abundance throughout the warmer regions of the whole world. Under this head are included *Zinckenia*, Z., and *Coptobasis*, Ld.; as thus constituted, the genus shows some variation in structure, but is readily known by the notch above basal joint of antennæ in ♂.

recurvalis, F.

luctuosalis, Gn.; *Zelleri*, Brem.; *Bremeri*, Wk.

5. Agrotera, *Schrk.*

Face rounded; ocelli distinct; tongue developed. Antennæ three-fourths, in ♂ filiform, ciliated (1). Labial palpi moderate, curved, ascending, second joint with dense projecting scales beneath, flatly compressed, terminal joint moderately long, with acute triangular separate projecting tuft of scales in front. Maxillary palpi short, filiform, pointed. Abdomen in ♂ with small anal tuft. Posterior tibiæ with outer spurs one-half inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 closely approximated to 9 towards base. Hind wings over 1; veins 3, 4, 5 approximated at base, 7 out of 6 near origin, anastomosing with 8 to near middle.

A small and rather isolated genus, probably representing the ultimate stage of a development from the *Notarcha* group. Besides the one European species, I am acquainted only with one Indo-Malayan, and (if *Tetracona*, Meyr., be merged, which is perhaps advisable) one Australian.

nemoralis, Sc.

6. Satanastra, n. g.

Face rounded; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ filiform, ciliated (½). Labial palpi moderate,

curved, ascending, second joint with loosely appressed scales, more or less rough beneath, terminal joint moderate, rather slender, pointed. Maxillary palpi short, filiform. Abdomen in ♂ with small anal tuft. Posterior tibiæ with outer spurs one-half inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 closely approximated to 9 towards base. Hind wings over 1; veins 3, 4, 5 approximated at base, 7 out of 6 near origin, anastomosing with 8 to two-fifths; in ♂ with median fold dilated in cell into an elongate-oval depression.

A development from *Notarcha*; a small Indo-Malayan genus, of which one species ranges into Siberia. It is included by Lederer under *Conchylodes*, Gn., and I have formerly called it by that name, but I now consider that Guenée's genus is quite distinct from it.

argyria, Butl.

7. Notarcha, *Meyr.*

Face rounded; ocelli distinct; tongue developed. Antennæ three-fourths, in ♂ filiform or with projecting joints, ciliated ($\frac{1}{4}$—$1\frac{1}{2}$). Labial palpi moderate, arched, ascending, second joint with dense projecting scales beneath, terminal joint short, thick, tolerably cylindrical, obtuse. Maxillary palpi moderate, porrected, filiform. Abdomen in ♂ with slender anal tuft. Posterior tibiæ with outer spurs somewhat less than one-half inner. Fore wings with vein 7 approximated to 9 near base, 8 and 9 stalked, 10 closely approximated to 9 towards base. Hind wings over 1; veins 3, 4, 5 closely approximated at base, 7 out of 6 near origin, anastomosing with 8 to about one-third.

An extensive genus, probably Indo-Malayan in origin, but apparently now distributed throughout intertropical regions. The only truly European species is a remarkable exception; two other Indian species range into Syria and Siberia respectively.

multilinealis, Gn.
ruralis, Sc.
paleacalis, Gn.

8. Pleuroptya, n. g.

Face rounded; ocelli distinct; tongue developed. Antennæ three-fourths, in ♂ filiform, ciliated (1). Labial palpi moderate, porrected, second joint with short dense projecting scales beneath, terminal joint short, exposed, obtuse. Maxillary palpi moderate, somewhat thick, filiform. Thorax in ♂ with an expansible tuft of

hairs, covered by a plate of flat scales, on each side from beneath base of hind wings. Abdomen in ♂ with small anal tuft. Posterior tibiæ with outer spurs one-third of inner. Fore wings with vein 7 closely approximated to 9 on basal third, 8 and 9 stalked, 10 closely approximated to 9 towards base. Hind wings over 1; veins 3, 4, 5 closely approximated at base, 7 out of 6 near origin, anastomosing with 8 to one-third.

A development of *Notarcha*. I am only acquainted with the one species, which ranges from Southern Europe to India.

aurantiacalis, F. R.

9. Eurrhypara, *Hb.*

Face somewhat rounded; ocelli distinct; tongue developed. Antennæ three-fourths, in ♂ filiform, ciliated (⅓). Labial palpi moderate, subascending, second joint with short dense projecting scales, terminal joint short, tolerably exposed, obtuse. Maxillary palpi moderate, porrected, slender, filiform. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ in ♂ with outer middle-spur extremely short, one-sixth of inner, outer end-spur one-fourth. Fore wings with vein 7 from near 8, 9 and 10 out of 8; in ♂ with a thickening of dense scales between 7 and 8 on under side. Hind wings over 1; veins 3, 4, 5 closely approximated at base, 7 out of 6 near origin, anastomosing with 8 to two-fifths.

Only the one species is known; it stands rather isolated, but has, perhaps, some relationship to the preceding, and ranges from Western Europe to Eastern Siberia. The depression, which Lederer mentions as existing between veins 7 and 9 of the fore wings in the ♂, I cannot find definitely traceable, but the genus is sufficiently distinct without this character.

urticata, L.

10. Perinephela, *Hb.*

Face rounded, oblique; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ filiform, ciliated (⅓). Labial palpi moderate, porrected, second joint with dense projecting scales attenuated to a point forwards, terminal joint concealed. Maxillary palpi moderate, porrected, filiform, apex somewhat penicillate. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ in ♂ with outer middle-spur rudimentary, almost obsolete, in ♀ one-half inner, outer end-spur one-half inner. Fore wings with vein 7

from near 8, 9 and 10 out of 8. Hind wings hardly over 1; veins 3, 4, 5 closely approximated at base, 7 out of 6 near origin, anastomosing with 8 to middle.

A development of *Phlyctænia;* the single known species occurs from Western Europe to Eastern Siberia. Lederer has accidentally misprinted Hübner's name, which is as above.

lancealis, Schiff.

11. Algedonia, *Ld.*

Face with a short rounded prominence; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ filiform, ciliated (⅔). Labial palpi moderate, porrected, second joint with dense rough projecting scales beneath, terminal joint concealed. Maxillary palpi moderate, porrected, filiform, apex somewhat penicillate. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ in ♂ with outer middle-spur rudimentary, almost obsolete, outer end-spur one-fifth of inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 rather approximated to 9 towards base. Hind wings over 1; veins 3, 4, 5 closely approximated at base, 7 out of 6 near origin, anastomosing with 8 to two-fifths.

A development of *Phlyctænia;* there is but one species, which ranges from Central Europe to Eastern Siberia.

luctualis, Hb.

12. Sclerocona, n. g.

Face with acute conical horny projection; ocelli distinct; tongue developed. Antennæ three-fourths, in ♂ filiform, ciliated (½). Labial palpi long, straight, porrected, second joint with dense projecting scales attenuated to a point forwards, terminal joint loosely scaled. Maxillary palpi moderate, porrected, apex penicillate. Abdomen in ♂ with moderate anal tuft. Middle tibiæ in ♂ rather dilated; posterior tibiæ in ♂ with outer middle-spur obsolete, outer end-spur one-third of inner. Fore wings in ♂ with lower margin of cell upcurved, and an upwards-turned pecten of scales beneath it on lower surface, 7 contorted towards base, 8 and 9 stalked, 10 out of 8 (or abnormally absent), 11 sometimes (abnormally) out of 8. Hind wings 1; veins 3, 4, 5 approximated at base, 7 out of 6 near origin, anastomosing with 8 to two-fifths.

A development of *Phlyctænia;* the single species is known only from South-east Europe. Lederer founded the genus *Calamochrous* for an American species, and

placed with it this insect, which he had not seen; it is, however, totally distinct. The abnormal differences in neuration which are noted above occurred in one wing of a specimen which was normal on the other side; probably they are a monstrosity only, but I have seen only two specimens.

acutella, Ev.

13. Phlyctænia, *Hb.*

Face slightly rounded; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ filiform, ciliated (¾—1). Labial palpi moderately long, porrected, second joint with dense projecting scales attenuated to a point forwards, terminal joint concealed. Maxillary palpi moderate, porrected, apex penicillate or somewhat dilated with scales. Abdomen in ♂ with moderate anal tuft. Middle tibiæ in ♂ sometimes dilated and containing tuft of hairs in groove; posterior tibiæ with outer middle-spur in ♂ obsolete, in ♀ one-half inner, outer end-spur one-half to three-fourths of inner. Fore wings with vein 7 from rather near 9, 8 and 9 stalked, 10 more or less approximated to 9 towards base. Hind wings over 1; veins 3, 4, 5 approximated at base, 7 out of 6 near origin, anastomosing with 8 to two-fifths.

An early offshoot from *Pyrausta*. The genus is of considerable size, and is characteristic of Europe and North America, probably originating in the former; there is a locally developed group of species in the Hawaiian Islands, and one species in Australia; it has not yet been recognised elsewhere. I have previously called this genus *Scopula*, which term I now recognise to have been wrongly applied.

cilialis, Hb.
**fimbriatalis*, Dup.
languidalis, Ev.
testacealis, Z. (♂ not seen).
**gratialis*, Brem. (*gracialis*, form. prav.).
croccalis, Hb.
institalis, Hb.
confinalis, Ld.
lutealis, Hb.
ferrugalis, Hb.
elutalis, Schiff.
fulvalis, Hb.
**tritalis*, Christ.
**bipunctalis*, H.-S.; *dispunctalis*, Gn.
scorialis, Z.
**costalis*, Ev.
inquinatalis, Z. (? var. seq.).
prunalis, Schiff.
cyanalis, Lah.
orbicentralis, Christ.
**ustrinalis*, Christ.
accolalis, Z.
terrealis, Tr.
fuscalis, Schiff.
sambucalis, Schiff.

14. Nomophila, *Hb.*

Face slightly rounded, oblique; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ filiform, ciliated with fascicles ($1\frac{1}{3}$). Labial palpi moderately long, porrected, second joint with dense projecting scales attenuated to a point forwards, terminal joint concealed. Maxillary palpi short, filiform. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs less than one-half inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 closely approximated to 9 towards base. Hind wings $1\frac{1}{3}$—$1\frac{1}{2}$; veins 3, 4, 5 closely approximated at base, 7 out of 6 near origin, anastomosing with 8 to two-fifths.

An early developmental form of *Pyrausta*, showing in the narrowed fore wings an adaptation to a grassy habitat. The single species is practically cosmopolitan, and there is no reason to suppose it has been artificially introduced anywhere.

noctuella, Schiff.

15. Metaxmeste, *Hb.*

Head rough-haired, face rounded; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ filiform, ciliated simply or with fascicles ($\frac{1}{3}$—1). Labial palpi moderately long, porrected, second joint with very long rough projecting hairs, terminal joint concealed. Maxillary palpi moderate, porrected, apex terminating in a pencil of loose scales. Abdomen in ♂ with moderate anal tuft. Femora rough-haired; posterior tibiæ with outer spurs three-fourths of inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 approximated to 9 towards base; in ♂ sometimes with a long expansible pencil of hairs beneath from base near inner margin. Hind wings over 1; veins 3, 4, 5 approximated at base, 7 from point with or out of 6 near origin, anastomosing shortly with 8 to one-fifth.

An early alpine development of *Pyrausta;* it has certainly no immediate relationship to the other forms included with it by Lederer under his *Hercyna*. *Catharia*, Ld., is merged in it. The species are restricted to the mountains of Europe and Asia Minor.

pyrenæalis, Dup.
sericatalis, H.-S.
schrankiana, Hoch.
phrygialis, Hb.

16. Isocentris, *Meyr.*

Face slightly rounded; ocelli distinct; tongue developed. Antennæ three-fourths, in ♂ filiform, ciliated (1—2). Labial palpi moderately long, porrected, second joint with dense projecting scales attenuated to a point forwards, terminal joint concealed. Maxillary palpi moderate, porrected, apex penicillate. Abdomen in ♂ with slender anal tuft. Posterior tibiæ with spurs all long and almost equal. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 approximated to 9 towards base. Hind wings 1; veins 3, 4, 5 approximated at base, 7 out of 6 near origin, anastomosing with 8 to two-fifths.

A small Indo-Malayan genus, of which the species range very widely. I am not sure that the following Central Asiatic species is certainly referable here, as I have only seen one specimen in indifferent condition, with the structural characters partly obscured. It is an offshoot of *Pyrausta*.

læt alis, Stgr., List XXXIII.

17. Psammotis, *Hb.*

Face somewhat rounded; ocelli distinct; tongue developed. Antennæ three-fourths, in ♂ filiform or serrulate, ciliated ($\frac{3}{4}$—1). Labial palpi moderately long, porrected, second joint with dense projecting scales attenuated to a point forwards, terminal joint concealed. Maxillary palpi moderate, porrected, filiform, terminating in somewhat penicillate scales. Abdomen in ♂ with small anal tuft. Posterior tibiæ with outer spurs two-thirds of inner. Fore wings with vein 7 from rather near 8, 9 and 10 out of 8. Hind wings over 1; veins 3, 4, 5 closely approximated at base, 7 out of 6 near origin, anastomosing with 8 to two-fifths.

A development of *Pyrausta*, consisting only of the two following European species; whether the genus is a natural or tenable one appears to me very doubtful. It would not surprise me to find that the origin of vein 10 of the fore wings from 9, which is the only distinguishing point from *Pyrausta*, is not constant, although in fact it holds in all the specimens which I have examined. The generic name is printed by Hübner *Psamotis*, but in the two collateral forms of the name given at the same time (Psammoten, &c.) the double m is used; this is also etymologically correct, and the first spelling is

therefore certainly a mere typographical error, which I have removed.

pulveralis, Hb.
hyalinalis, Hb.

18. Pyrausta, *Schrk.*

Face rounded; ocelli distinct; tongue developed. Antennæ two-thirds to three-fourths, in ♂ filiform, ciliated (½—2) or rarely naked. Labial palpi moderate, porrected, second joint with dense projecting scales attenuated to a point forwards, terminal joint concealed. Maxillary palpi moderate, porrected, apex loosely penicillate. Abdomen in ♂ with moderate anal tuft. Middle tibiæ in ♂ sometimes dilated, enclosing tuft of hairs in groove; posterior tibiæ with outer middle-spur one-third to two-thirds (rarely one-fifth), outer end-spur one-half to three-fourths of inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 closely approximated to 9 towards base, rarely anastomosing with 9. Hind wings over 1; veins 3, 4, 5 more or less approximated at base, 7 out of 6 near origin, anastomosing with 8 to one-third to two-fifths.

Although representatives of this genus are found nearly everywhere, it is mainly characteristic of the temperate regions of the northern hemisphere, and is probably of European origin. The occasional anastomosis of veins 9 and 10 of fore wings is a curious form of variation, found also in *Evergestis;* no use can be made of it in classification, as both forms occur in different individuals of the same species, or even in different wings of the same specimen. The species in which I have noted this form of variation are *trinalis* and *decrepitalis*, but it may probably occur more or less rarely in others also. Hence the Hawaiian genus *Protocolletis*, Meyr., which was founded essentially on this character, should be suppressed.

trimaculalis, Stgr.
quadripunctalis, Schiff.
octomaculata, F.
nyctemeralis, Hb.
nigralis, F.
fascialis, Hb.
cingulata, L.
nigrata, Sc.
**Ledereri*, Stgr.
albofascialis, Tr.; *minutalis*, Spr.
obfuscata, Sc.
acontialis, Stgr.
pellicalis, Stgr.
castalis, Tr.
tithonialis, Z.
dotatalis, Christ.
sanguinalis, L.

purpuralis, L.
fibulalis, Christ.
falcatalis, Gn.
aurata, Sc.
**solemnalis*, Christ.
**pullatalis*, Christ.
porphyralis, Schiff.
alborivulalis, Ev.
**tendinosalis*, Brem.
cespitalis, Schiff.
limbopunctalis, H.-S.
**tesserulalis*, Christ.
mannalis, Hb.
ephippialis, Zett.
**limitalis*, Christ.
ærealis, Hb.
uliginosalis, Stph.
alpinalis, Schiff.
rhododendronalis, Dup.
nebulalis, Hb.; *? sororialis*, Hein.; *? nitidalis*, Hein.
decrepitalis, H.-S.
turbatalis, Christ. (doubtful; ♂ not seen).
olivalis, Schiff.
**hilaralis*, Christ.
numeralis, Hb.; *illutalis*, Gn.
torralis, Möschl.
murinalis, F. R.
austriacalis, H.-S.
**præpetalis*, Ld.
incoloralis, Gn.; *ruficostalis*, Ld.
repandalis, Schiff.
**varialis*, Brem.
extinctalis, Christ. (♂ not seen).
**perlucidalis*, Hb.
**perpendiculalis*, Dup.
**labutonalis*, Ld.
flavalis, Schiff.
**biternalis*, Mn.
trinalis, Schiff.
auralis, Peyer.
gracilis, Butl.; *explicatalis*, Christ.
clausalis, Christ.
moderatalis, Christ.
rubiginalis, Hb.
stachydalis, Zk.
verbascalis, Schiff.
nubilalis, Hb.
palustralis, Hb.
**appositalis*, Ld.
**crudalis*, Ld.
**lutulentalis*, Ld.
asinalis, Hb.
subsequalis, H.-S.
saxatilis, Stgr., List XXXIII.

19. Microstega, n. g.

Face rounded; ocelli distinct; tongue developed. Antennæ three-fourths, in ♂ filiform, ciliated ($\frac{1}{2}$). Labial palpi moderately long, porrected, second joint with dense projecting scales attenuated to a point forwards, terminal joint concealed. Maxillary palpi moderate, porrected, apex somewhat penicillate. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer middle-spur one-third, outer end-spur one-half inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 closely approximated to 9 towards base; in ♂ with a groove beneath cell near base, covered above by dense scales from upper side. Hind wings over 1; veins 3, 4, 5 closely approximated at base, 7 out of 6 near origin, anastomosing

with 8 to two-fifths; in ♂ with a groove above cell near base, above which is a thick ridge of scales.

A development of *Pyrausta*, containing only the single European species.

pandalis, Hb.

20. Mecyna, *Stph.*

Face slightly rounded, oblique; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ filiform, ciliated ($\frac{1}{2}$—$\frac{2}{3}$). Labial palpi rather long, porrected, second joint with dense scales attenuated to a point forwards, terminal joint concealed. Maxillary palpi moderate, porrected, triangularly dilated with dense scales, forming an angular projection at apex beneath. Abdomen in ♂ with small anal tuft. Middle tibiæ in ♂ dilated, usually containing tuft of hairs in groove; posterior tibiæ with outer middle-spur one-half, outer end-spur one-half to three-fourths of inner. Fore wings with vein 7 from rather near 9, 8 and 9 stalked, 10 closely approximated to 9 towards base. Hind wings over 1; veins 3, 4, 5 approximated at base, 7 out of 6 near origin, anastomosing with 8 to two-fifths.

Probably an earlier ancestral form of *Pyrausta*. The genus is quite cosmopolitan, but probably comprises only a few species. The use of the generic name seems to call for some explanation; its actual history appears to have been as follows:—Guenée first formed the genus *Mecyna* to include the *polygonalis* group and *asinalis*, and communicated its character to various entomologists, without having actually published it; amongst others, to Stephens, who published it first, evidently intending it to include all the species placed in it by Guenée, but he only mentions *asinalis*, because he did not suppose any other to be British. Subsequently Guenée published his own views, having by that time come to the conclusion that *asinalis* was wrongly included; he therefore restricts it to the *polygonalis* group. It appears to me that under these circumstances *polygonalis*, which was undoubtedly regarded by Stephens as belonging to the genus, and only not mentioned for obvious reasons, is justly to be looked on as the type.

polygonalis, Hb.

21. Cornifrons, *Ld.*

Face with long horny laterally compressed acute projection, terminating in a vertical edge, or with a sharp vertical ridge only

ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ filiform, ciliated with fascicles (2). Labial palpi moderate, obliquely ascending or porrected, second joint with short or long projecting scales beneath, terminal joint exposed or concealed. Maxillary palpi rather long, porrected, filiform, apex sometimes penicillate. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs one-half inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 approximated to 9 towards base. Hind wings over 1; veins 3, 4, 5 closely approximated at base, or 4 and 5 from a point, 7 out of 6 near origin, anastomosing with 8 to one-third.

There is a good deal of structural difference between the two species which I have placed together here; but I think it is reasonable and possible to regard them as extreme forms of the same type, the range of variation being analogous to that of the similar genus *Titanio*. The genus is perfectly definable, and intermediate forms may probably be found hereafter. The species are both from the Mediterranean coasts.

ulceratalis, Ld.
isatidalis, Dup.

22. Loxostege, *Hb.*

Face with a rather short pointed or obtuse conical horny projection; ocelli distinct; tongue developed. Antennæ three-fourths, in ♂ filiform, ciliated (½—1). Labial palpi moderately long, porrected, second joint with dense projecting scales attenuated to a point forwards, terminal joint concealed. Maxillary palpi moderate, porrected, filiform, apex sometimes penicillate. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs one-half to three-fourths of inner, rarely with outer middle-spur in ♂ one-sixth of inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 more or less closely approximated to 9 towards base. Hind wings over 1; veins 3, 4, 5 approximated at base, 7 from point with or out of 6 near origin, anastomosing with 8 to one-third to two-fifths.

Characteristic of the temperate regions of the northern hemisphere, especially Europe, but stragglers occur also elsewhere. The frontal projection is always more or less clearly conical in general form, but the apex is sometimes acute, sometimes rounded, the former being more typical. This genus includes *Eurycreon*, Ld., *Phlyctænodes*, Gn., and *Ephelis*, Ld. Where, however, I have previously used the name *Eurycreon*, Ld., myself,

it has been in the sense of comprehending both this genus and *Metasia*, Gn., and in point of fact nearly all the Australian species included by me under the name are truly referable to *Metasia*.

nudalis, Hb.; *? bipunctalis*, Dup.
pustulalis, Hb.
cruentalis, Hb.
sticticalis, L.
**peregrinalis*, Ev.
Eversmanni. Stgr., List XXXIII.
**scutalis*, Hb.
peltalis, Ev.
consortalis, H.-S.
mucosalis, H.-S.
comptalis, Frr.
æruginalis, Hb.
**sedacovialis*, Ev.
**scalaralis*, Christ.
clathralis, Hb.
virescalis, Gn.
verticalis, L.
turbidalis, Tr.
sulphuralis, Hb.
palealis, Schiff.
algiralis, All.
**concoloralis*, Ld.

23. Titanio, *Hb.*

Face with short or long projecting horny plate, more or less rounded above, flat beneath, anterior edge emarginate or sometimes almost straight; sometimes with one or two short spines on side of face, and rarely with a sharp conical spine on forehead above projection; ocelli distinct; tongue developed. Antennæ three-fourths, in ♂ filiform, ciliated (1—2) or simple. Labial palpi moderate, porrected, second joint with short or long rough projecting scales beneath, terminal joint rather short, loosely scaled, sometimes almost concealed. Maxillary palpi moderate, rather short, or minute, filiform or with apex loosely penicillate. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs one-half to three-fourths of inner, legs sometimes hairy. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 rather approximated to 9 towards base. Hind wings over 1; veins 3, 4, 5 rather approximated at base, 4 and 5 sometimes stalked, 7 out of 6 near origin, anastomosing with 8 to one-third to two-fifths.

A considerable genus, especially characteristic of Central Asia, but spreading also into Europe and North America, and with two or three species in the Indo-Malayan and Australian regions. The variation in the development of the frontal projection and adjacent facial spines, and in the length of the maxillary palpi, have led to the creation of many small genera, which are not tenable on a general consideration of the whole,

as all transitional forms occur, nor does a strict collocation of forms showing a particular character bring together those which are most nearly allied. Hence I unite the whole into one easily defined genus. The stalking of veins 4 and 5 of the hind wings is not constant specifically, both forms occurring in different individuals of the same species. The genera thus merged are *Aporodes*, Gn., *Noctuomorpha*, Gn., *Threnodes*, Gn., *Noctuelia*, Gn., *Emprepes*, Ld., *Anthophilodes*, Gn., *Tegostoma*, Z., *Aeschremon*, Ld.

**conchylialis*, Christ.
Moeschleri, Christ.; *baphialis*, Ld.
**concinnalis*, Christ.
pudicalis, Dup.
pentodontalis, Ersch.
lepidalis, H.-S.
**plumbiferalis*, Christ.
**crubescens*, Christ.
turcomanica, Christ.
disparalis, H.-S.
comparalis, Hb.
alticolalis, Christ.
superba, Frr.
respertalis, H.-S.
**plebcialis*, Christ.
floralis, Hb.
**austautalis*, Oberth.
normalis, Hb.
venustalis, Ld.
magnificalis, Christ.
**modestalis*, Christ.
Staudingeri, Christ.
originalis, H.-S.
pulchellalis, Stgr., List XXXIII.
sartalis, Hb.
pollinalis, Schiff.
**cacuminalis*, Ev.
multiguttalis, Stgr.
**eponyma*, n. s.; *Moeschleri*, Roman. (nec Christ.).
heliothalis, Stgr., List XXXIII.
paschalis, Stgr., List XXXIII.
sultanalis, Stgr., List XXXIII.

24. Cynæda, *IIb.*

Face with a slight rounded prominence; ocelli distinct; tongue short. Antennæ two-thirds, in ♂ filiform, ciliated (1). Labial palpi moderately long, porrected, second joint clothed with loose scales attenuated forwards, terminal joint concealed. Maxillary palpi moderate, porrected, rather triangularly dilated terminally with loose scales. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs about one-half inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 closely approximated to 9 near base; scales of inner margin forming a large projecting tuft about one-third. Hind wings over 1; veins 3, 4, 5 rather approximated at base, 7 out of 6 near origin, anastomosing with 8 to one-third.

Allied to *Titanio;* a small genus, possibly consisting only of one geographically varying species.

dentalis, Schiff.

furiosa, Stgr., List XXXIII.

25. Pelæa, *Ld.*

Face rounded; ocelli distinct; tongue developed. Antennæ three-fourths, in ♂ ciliated. Labial palpi moderate, porrected, second joint with rough projecting scales attenuated forwards. Maxillary palpi moderate, porrected. Abdomen in ♂ with moderate anal tuft. Fore wings in ♂ with vein 7 bent apart from 8 near base, enclosing with it a roughened depression on lower surface, 9 and 10 out of 8. Hind wings over 1; 3, 4, 5 approximated at base, 7 out of 6 near origin, anastomosing with 8.

I have not been able to see a specimen of the scarce species which composes this genus, and the characters given above are derived from Lederer; assuming their correctness, the genus is distinct enough, and must be allied to *Titanio*.

**ramalis*, Hb.

26. Heliothela, *Gn.*

Face rounded; ocelli distinct; tongue developed. Antennæ less than two-thirds, in ♂ filiform, ciliated (¼—⅓). Labial palpi moderate, porrected, second joint with short dense projecting scales beneath, becoming longer towards apex, terminal joint moderate, stout, exposed. Maxillary palpi long, not much shorter than labial, porrected, expanded with scales towards apex, truncate. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs half inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 somewhat approximated to 9 towards base. Hind wings over 1; veins 3, 4, 5 approximated at base, 7 out of 6 near origin, anastomosing with 8 to one-fifth to two-fifths.

A small genus, represented by scattered species in probably all the principal regions; it is in the direct line of transition between *Titanio* and *Scoparia*. The lower margin of the cell in the hind wings is sometimes so far clothed with hairs towards the base as to make a marked approach to the structure of the *Crambidæ;* yet the hairs do not form a clearly defined pecten as in that family.

atralis, Hb.

**pregalliensis*, Frey.

27. Scoparia, *Hw.*

Face rounded, vertical; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ filiform, ciliated ($\frac{1}{4}$—$1\frac{1}{2}$). Labial palpi moderate or long, porrected, second joint with long dense projecting scales beneath, terminal joint moderate, exposed, or resting in scales of second. Maxillary palpi rather long, porrected, triangularly dilated with scales. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs one-half inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 approximated to 9 towards base. Hind wings from over 1 to nearly 2; veins 3 and 4 remote, 4 and 5 from a point or stalked, 7 out of 6 near origin, anastomosing with 8 to one-third to two-fifths, cell without discal hairs.

A cosmopolitan genus of large size but uneven distribution; within the tropics it hardly seems to occur except at considerable altitudes; its maximum of development is reached in New Zealand. Lederer states that in *S. centuriella* vein 8 of the hind wings is free from 7; it is not so in my specimens of that species, nor is there a similar instance in any individual of those which I possess (numbering about 100 species); I judge therefore that his example must have been an unusual variety or sport.

ochrealis, Schiff.
lætella, Z.
resinea, Hw.
lineola, Curt.
angustea, Stph.
alpina, Stt.; *gracilalis*, Stt.
petrophila, Stdfs.
sudetica, Z.
**absconditalis*, Roman.
murana, Curt.
frequentella, Stt.
cratægella, Hb.
truncicolella, Stt.
valesialis, Dup.
**delphinatalis*, Gn.
**gallica*, Peyer.
**scriziatalis*, Oberth.
manifestella, H.-S.
sibirica, Ld.
phæoleuca, Z.
**staudingeralis*, Mab.
pallida, Stph.
cembræ, Hw.
Zelleri, Wk.
ulmella, Dale.
**mandschurica*, Christ.
ingratella, Z.
dubitalis, Hb.
ambigualis, Tr.; *atomalis*, Dbld.
basistrigalis, Knaggs.
incertalis, Dup.
perplexella, Z.
centuriella, Schiff.

28. Orenaia, *Dup.*

Face rounded; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ filiform, ciliated (⅓). Labial palpi moderate, porrected, second joint with short dense projecting scales beneath, terminal joint moderate, exposed, obtuse or pointed. Maxillary palpi moderate, porrected, rather thick, obtuse or pointed. Abdomen in ♂ with moderate anal tuft. Middle tibiæ in ♂ sometimes with pencil of hairs in groove; posterior tibiæ with outer spurs one-half inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 approximated to 9 towards base. Hind wings over 1; veins 3, 4, 5 approximated at base, 7 out of 6 near origin, anastomosing with 8 to one-third.

An intermediate link between *Scoparia* and *Evergestis*. The three species are natives of the mountains of Europe.

alpestralis, F.
rupestralis, Hb.
helveticalis, H.-S.

29. Evergestis, *Hb.*

Face rounded; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ filiform, ciliated (½). Labial palpi short or moderate, porrected, second joint rough-scaled, terminal joint rather short, loosely scaled, somewhat pointed. Maxillary palpi as long as second joint of labial, porrected, filiform, apex somewhat penicillate. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer middle-spur one-half, outer end-spur one-half to three-fourths of inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 closely approximated to 9 towards base, sometimes anastomosing with 9. Hind wings over 1; veins 3, 4, 5 closely approximated at base, 7 out of 6 near origin, anastomosing with 8 to one-third.

A genus of moderate extent, specially characteristic of the European region, but extending also into North America. The occasional anastomosis of veins 9 and 10 of the fore wings, as in *Pyrausta*, is not a constant specific character, some specimens not showing it; the species in which I have observed it are *ænealis* and *anartalis*.

ænealis, Schiff.
subfuscalis, Stgr.
**mundalis*, Gn.
**submundalis*, Mill.
limbata, L.
**infirmalis*, Stgr.

politalis, F.
straminalis, Hb.
extimalis, Sc.
**vagabundalis*, Christ.
nomadalis, Ld.
**cæsialis*, H.-S.
saxicolalis, Mn.
desertalis, Hb.
**serratalis*, Stgr.
**manglisalis*, Ersch.
orientalis, Ev.
umbrosalis, F. R.
Pechi, Baker; *renatalis*, Oberth.
frumentalis, L.
**allardalis*, Oberth.
segetalis, H.-S.
**helenalis*, Stgr.
sophialis, F.
anartalis, Stgr., List XXXIII.

30. Mesographe, *Hb.*

Face slightly rounded, oblique; ocelli distinct: tongue developed. Antennæ two-thirds, in ♂ filiform, ciliated ($\frac{1}{4}$—$\frac{1}{2}$). Labial palpi moderate, porrected, second joint with dense projecting scales attenuated to a point forwards, terminal joint concealed. Maxillary palpi moderately long, porrected, triangularly dilated towards apex with loose spreading scales. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs one-half inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 approximated to 9 towards base. Hind wings over 1; veins 4 and 5 closely approximated at base, 7 out of 6 near origin, anastomosing with 8 to one-third.

Allied to *Evergestis*. One species extends from Western Europe to Japan, and a second throughout Africa; the third is also African.

forficalis, L.
africalis, Gn.
**conquisitalis*, Gn.

31. Prochoristis, n. g.

Face slightly rounded; ocelli distinct; tongue developed. Antennæ three-fourths, in ♂ stout, filiform, ciliated ($\frac{1}{3}$). Labial palpi moderately long, porrected, second joint with dense projecting scales attenuated to a point forwards, terminal joint concealed. Maxillary palpi moderate, porrected, triangularly dilated terminally with scales, apex obliquely truncate. Abdomen in ♂ with small anal tuft. Middle tibiæ in ♂ rather dilated, grooved; posterior tibiæ with outer spurs one-half inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 rather approximated to 9 towards base. Hind wings over 1; veins 3, 4, 5 approximated at

base, 7 approximated to 6 at base but separate, anastomosing with 8 to one-third.

Apparently allied to *Cybolomia*. The three species are all Asiatic.

rupicapralis, Ld.
capparidis, Christ.
**simplicialis*, Brem. (misprinted *-ealis*).

32. Cybolomia, *Ld.*

Face flat, oblique; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ dentate or filiform, ciliated (½—1). Labial palpi long, porrected, second joint with dense projecting scales attenuated to a point forwards, terminal joint concealed. Maxillary palpi moderately long, porrected, triangularly dilated with scales. Abdomen in ♂ with small anal tuft. Posterior tibiæ with outer middle-spur one-third, outer end-spur one-half inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 approximated to 9 towards base. Hind wings over 1; veins 3, 4, 5 approximated at base, 7 out of 6 near origin, anastomosing with 8 to two-fifths.

A somewhat aberrant genus, seeming to have relationship to *Evergestis;* the palpi resemble those of the *Crambidæ*, and there is some analogy in other respects. The species range from Southern Europe into Western Asia on the one hand, and South Africa on the other. Guenée's name *Hypolais* is earlier, but is pre-occupied in the birds. The first species is abnormal, and perhaps should not be included.

? *monialis*, Ersch. (♂ not seen).
fractilinealis, Christ.
nemausalis, Dup.
dulcinalis, Tr.
siccalis, Gn.
lutosalis, Mn.
pentadalis, Ld.

33. Hellula, *Gn.*

Face somewhat rounded; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ stout, ciliated (¼). Labial palpi moderate, obliquely ascending, second joint with dense rough projecting scales beneath, terminal joint rather short, with acute triangular tuft of scales at apex beneath. Maxillary palpi moderate, porrected, slender, filiform. Abdomen in ♂ with small anal tuft. Posterior tibiæ with outer spurs nearly as long as inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 closely approximated to 9 towards base. Hind wings over 1; veins 3 and 4

approximated at base, 4 and 5 from a point or stalked, 7 out of 6 near origin, anastomosing with 8 to one-third.

The exact affinity of this genus seems very uncertain. There is only one species, which is now cosmopolitan in warm countries, but I am disposed to think that it has probably been artificially introduced from Europe.

undalis, F.

34. Metasia, *Gn.*

Face with rounded pustule-shaped horny projection; ocelli distinct; tongue developed. Antennæ three-fourths, in ♂ filiform, ciliated ($\frac{1}{2}$—1), sometimes with projecting scales at joints. Labial palpi moderately long, porrected, second joint with dense projecting scales attenuated to a point forwards, terminal joint concealed. Maxillary palpi moderate, porrected, apex penicillate. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs one-half inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 closely approximated to 9 towards base. Hind wings 1; veins 3, 4, 5 approximated at base, 7 out of 6 near origin, anastomosing with 8 to near middle.

A genus of moderate extent, distributed through Southern Europe, the Indo-Malayan region, and Australia. Lederer oddly makes no mention of the frontal protuberance, which is conspicuous.

octogenalis, Ld.
suppandalis, Hb.
**ochrofascialis*, Christ.
carnealis, Tr.
**ossealis*, Stgr.
**mendicalis*, Stgr.
corsicalis, Dup.
ophialis, Tr.
adelalis, Gn.
olbienalis, Gn.

35. Nacoleia, *Walk.*

Face rounded, vertical; ocelli distinct; tongue developed. Antennæ three-fourths, in ♂ stout, subdentate or serrate, ciliated ($\frac{1}{3}$—$1\frac{1}{4}$), sharply bent beyond middle, with a tuft of scales on back above bend, sometimes also bent before middle. Labial palpi moderate, porrected or subascending, second joint with short dense projecting scales beneath, terminal joint rather short, stout, exposed. Maxillary palpi short, filiform. Abdomen in ♂ with small anal tuft. Posterior tibiæ with outer middle-spurs one-third, outer end-spurs one-half inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 approximated to 9 towards base. Hind wings slightly over 1; veins 3, 4, 5 approximated at base, 7 out of 6 near origin, anastomosing with 8 to near middle.

A rather small genus, ranging through the Indo-Malayan region, Australia, and the Pacific Islands; one species extends into Eastern Siberia. I have given it previously the name of *Semioceros*, but now recognise that Walker's name should be adopted. The genus is one of a small group, all having tufted antennæ in the ♂, and originating probably from *Metasia*.

fenestralis, Christ. (*Agrotera*).

36. Diasemia, *IIb*.

Face rounded; ocelli distinct; tongue developed. Antennæ three-fourths, in ♂ filiform, ciliated with fascicles (1½—2). Labial palpi moderately long, porrected, second joint with dense projecting scales, terminal joint moderate, exposed, tolerably cylindrical, pointed. Maxillary palpi moderate, porrected, apex loosely penicillate. Abdomen in ♂ with slender anal tuft. Posterior tibiæ with outer spurs one-half to two-thirds of inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 closely approximated to 9 towards base. Hind wings over 1; veins 3, 4, 5 approximated at base, 7 out of 6 near origin, anastomosing with 8 to one-third.

A very small but quite cosmopolitan genus, allied to *Metasia*.

litterata, Sc.

ramburialis, Dup.

37. Duponchelia, *Z*.

Face rounded; ocelli distinct; tongue developed. Antennæ three-fourths, in ♂ filiform, shortly ciliated (¼). Labial palpi moderate, ascending, second joint with dense projecting scales beneath, terminal joint rather short, cylindrical, exposed. Maxillary palpi short, apex loosely penicillate. Abdomen in ♂ very long, anal segment elongate, with exsertible genital tuft. Posterior tibiæ with outer middle-spur in ♂ one-fourth, in ♀ one-half inner. Fore wings with an upward-turned ridge of scales from vein 1 near base beneath, 7 from near 8, 9 and 10 out of 8; in ♂ with a naked irregular indentation in cell beneath, and a small indentation between 7 and 8 at base, 2 almost from angle or out of 4, 3 and 4 stalked. Hind wings 1; veins 3, 4, 5 closely approximated at base, 7 out of 6 near origin, anastomosing with 8 to two-fifths.

Allied to *Diasemia*; the single species is South European. Zeller's genus was published in 1847, and

in Scudder's 'Nomenclator' a genus of Diptera, *Duponchelia*, Desv., is dated from the same year; but on application to Mr. G. H. Verrall, he kindly informed me that Desvoidy's genus was published in 1863, Scudder's entry being erroneous.

fovealis, Z.

38. Ischnurges, *Ld.*

Face somewhat rounded; ocelli distinct; tongue developed. Antennæ four-fifths, in ♂ ciliated (¼—1), with angularly projecting scales at joints, or sometimes filiform. Labial palpi moderately long, porrected, second joint with dense projecting scales attenuated to a point forwards, terminal joint concealed. Maxillary palpi moderate, porrected, filiform, apex penicillate. Abdomen in ♂ long, with moderate anal tuft. Posterior tibiæ with outer spurs one-half inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 approximated to 9 at base. Hind wings 1; veins 3, 4, 5 somewhat approximated at base, 7 out of 6 near origin, anastomosing with 8 to one-third.

Allied to *Diasemia;* a small genus, ranging from Southern Europe through the Indo-Malayan region to Australia.

bruguieralis, Dup.

diffusalis, Gn.

39. Stenia, *Gn.*

Face somewhat rounded, more or less oblique; ocelli distinct; tongue developed. Antennæ four-fifths to almost one, in ♂ filiform, with projecting scales at apex of joints, ciliated (1). Labial palpi moderately long, porrected, second joint with dense projecting scales attenuated to a point forwards, terminal joint concealed. Maxillary palpi moderate, porrected, apex loosely penicillate. Abdomen in ♂ very long, with moderate anal tuft. Posterior tibiæ with outer spurs one-half inner. Fore wings with vein 7 from near 8, 9 and 10 out of 8. Hind wings somewhat over 1 veins 3, 4, 5 closely approximated at base, 7 out of 6 near origin, anastomosing with 8 to two-fifths.

Probably a development from the preceding; apparently characteristic of the European region. *Amaurophanes*, Ld., and *Arnia*, Gn., are included here.

**dissipatalis*, Christ.

**intercacatalis*, Christ.

**amœnialis*, Christ.
stigmosalis, H.-S.
punctalis, Schiff.; *concoloralis*, Oberth.; *? fuscocilialis*, Rag.
nervosalis, Gn.

40. Hydriris, *Meyr.*

Face rounded; ocelli distinct; tongue developed. Antennæ five-sixths, in ♂ ciliated (⅓), with angularly projecting scales at joints. Labial palpi moderate, arched, ascending, second joint with dense projecting scales beneath, terminal joint moderate, with triangular projecting tuft of scales beneath. Maxillary palpi rudimentary. Abdomen in ♂ very long, with small anal tuft. Posterior tibiæ with outer spurs one-half inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 closely approximated to 9 towards base. Hind wings 1; veins 3, 4, 5 approximated at base, 7 out of 6 near origin, anastomosing with 8 to two-fifths.

Probably allied to *Ischnurges;* a genus of two Indo-Malayan species, of which one ranges very widely, extending over Southern Europe, Africa, and Australia. Lederer's name *Spanista* is preoccupied in the Hymenoptera.

ornatalis, Dup.

41. Antigastra, *Ld.*

Face flat, oblique; ocelli distinct; tongue developed. Antennæ five-sixths, in ♂ ciliated (¼). Labial palpi moderate, porrected, second joint with dense rough projecting scales attenuated to a point forwards, terminal joint concealed. Maxillary palpi moderate, apex loosely penicillate. Abdomen in ♂ with moderate anal tuft. Anterior femora and tibiæ in ♂ clothed with rough projecting hairs on inner side; posterior tibiæ with outer spurs one-half inner; all tarsi very long. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 closely approximated to 9 towards base. Hind wings over 1; veins 3, 4, 5 closely approximated at base, 7 out of 6 near origin, anastomosing with 8 to two-fifths.

Allied to *Ischnurges* and *Stenia*. The typical species is Indian, but ranges into Europe; the other is Siberian, and may very likely not belong to the genus.

catalaunalis, Dup.
**virgatalis*, Christ.

42. Nausinoe, *Hb.*

Face flat, oblique; ocelli distinct; tongue developed. Antennæ about one, in ♂ filiform or serrate, ciliated (½—1) or simple. Labial palpi moderate or rather short, subascending, second joint with long dense projecting scales beneath, terminal joint concealed. Maxillary palpi short, thick, apex somewhat penicillate. Abdomen in ♂ with slender anal tuft. Anterior tibiæ and tarsi in ♂ sometimes clothed with long dense hairs; middle tibiæ in ♂ sometimes containing tuft of hairs in groove; posterior tibiæ with outer spurs one-half to four-fifths of inner. Fore wings with veins 2 and 3 in ♂ sometimes stalked from angle of cell, 7 from near 9, 8 and 9 stalked, 10 closely approximated to 9 towards base. Hind wings over 1; veins 3, 4, 5 approximated at base, 3 and 4 in ♂ sometimes sinuate so as to enclose a transparent space at base. 7 out of 6 near origin, anastomosing with 8 to one-fourth to two-fifths.

Allied to *Antigastra*, and probably a development from *Ischnurges*. It consists of a few species, scattered generally throughout warmer countries, some of them having an exceedingly wide range. *Phalangiodes*, Gn., *Lepyrodes*, Gn., *Synclera*, Ld., and *Rhimphalea*, Ld., are included here. The following species are without the hairy legs or eccentricities of neuration which are shown by some others :—

traducalis, Z.
**Bleusei*, Oberth.

43. Euclasta, *Ld.*

Face flat, oblique; ocelli distinct; tongue developed. Antennæ over one, in ♂ ciliated (1), with angularly projecting scales at joints. Labial palpi moderate, porrected, with dense projecting scales, narrowed to a point forwards, terminal joint concealed. Maxillary palpi very short, thick, apex loosely penicillate. Abdomen in ♂ long, with moderate anal tuft. Posterior tibiæ with outer spurs about one-third of inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 closely approximated to 9 towards base. Hind wings 1¼; veins 3, 4, 5 approximated at base, 7 out of 6 near origin, anastomosing with 8 to two-fifths.

Derivable from *Nausinoe;* a small Indo-Malayan genus, extending into Asia Minor and Australia.

splendidalis, H.-S.

44. Hydrocampa, *Latr.*

Face rounded, vertical; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ filiform, towards apex with angularly projecting joints, ciliated ($\frac{2}{3}$). Labial palpi moderate, ascending, second joint with short or moderately long rough projecting scales beneath, terminal joint moderate, pointed or obtuse. Maxillary palpi moderate, subascending, loosely scaled, somewhat pointed. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs three-fourths of inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 closely approximated to 9 near base. Hind wings somewhat over 1; veins 3, 4, 5 closely approximated at base, 7 out of 6 near origin, anastomosing with 8 to one-third.

A small European genus; it would seem probable that it originates from the neighbourhood of *Metasia*, but the exact connection is not distinctly traceable. The aquatic habits of this and the following genera are doubtless mainly responsible for their difference in superficial appearance from the rest of the family. Lederer, by an unaccountable error, states vein 10 of the fore wings to rise out of 9, whereas it is by the separation of these veins that the genus is distinguished from the following.

arundinalis, Ev.
nymphæata, L.
rivulalis, Dup.

45. Nymphula, *Schrk.*

Face rounded, vertical; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ filiform or with angularly projecting scales at joints, ciliated ($\frac{1}{3}$—$\frac{3}{4}$). Labial palpi moderate, arched, ascending, second joint with short or moderate projecting scales beneath, terminal joint moderate, obtuse or tolerably pointed. Maxillary palpi moderate or rather short, porrected, apex with loose penicillate scales. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs one-half inner. Fore wings with vein 7 from near 8, 9 and 10 out of 8. Hind wings 1; veins 3, 4, 5 approximated at base, or 4 and 5 from a point, 7 out of 6 near origin, anastomosing with 8 to one-half to three-fourths.

A development from *Hydrocampa*. It is an Indo-Malayan genus of some extent, but some straggling forms of it seem to occur in all the principal regions.

stagnata, Don.
candidata, F.
stratiotata, L.
**rufoterminalis*, Christ.
**obnubilalis*, Christ.
**vittalis*, Brem.
**algiralis*, Gn.
**thyrididalis*, Ld.

46. Cataclysta, *Hb.*

Face rounded, vertical; ocelli obsolete; tongue developed. Antennæ two-thirds, in ♂ filiform, towards apex with angularly projecting joints, ciliated ($\frac{1}{2}$). Labial palpi moderately long, arched, ascending, second joint with appressed scales or shortly rough-haired beneath, terminal joint moderate, slender, obtuse or pointed. Maxillary palpi short or moderate, filiform. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs three-fourths of inner. Fore wings with vein 7 from near 8, 9 and 10 out of 8. Hind wings 1; veins 3 and 4 approximated at base, 5 approximated or stalked or coincident with 4, 7 out of 6 near origin, anastomosing or wholly coincident with 8.

A development of the preceding; probably especially Indo-Malayan, but every main region seems to possess one or two species.

lemnata, L.

47. Donacaula, n. g.

Face rounded, vertical; ocelli distinct; tongue obsolete. Antennæ in ♂ three-fifths, filiform, ciliated ($1\frac{1}{2}$). Labial palpi very long, porrected, clothed with dense loosely dilated scales, attenuated towards apex, terminal joint moderately long, exposed. Maxillary palpi moderate, triangularly dilated with loose scales. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs two-thirds of inner. Fore wings with vein 7 from near 8, 9 and 10 out of 8, 11 sometimes anastomosing with 12 (sometimes abnormally 8 and 9 out of 10). Hind wings over 1; veins 4 and 5 approximated at base or stalked, 7 out of 6 near origin, anastomosing with 8 to one-third.

A development of *Schœnobius*. The single species is European and West Asiatic.

mucronella, Schiff.

48. Schœnobius, *Dup.*

Face with short conical projecting tuft of scales; ocelli distinct; tongue very short or obsolete. Antennæ in ♂ three-fifths, in ♀ less than one-half, in ♂ filiform, ciliated (1—3). Labial palpi very

long, porrected, clothed with dense loosely dilated scales, attenuated towards apex, terminal joint moderately long, exposed. Maxillary palpi moderate, triangularly dilated with loose scales. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs one-half to four-fifths of inner. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 somewhat approximated to 9 towards base, 11 sometimes anastomosing with 12. Hind wings 1 or over 1 veins 4 and 5 approximated at base, 7 out of 6 near origin, anastomosing with 8 to one-fifth to one-third.

A genus of limited extent but cosmopolitan distribution. The resemblance of this genus to *Chilo*, which has usually led to their being classed together, is due to analogy only; as reed-frequenting insects, they have both the form of wings and palpi, and the colouring, which is adapted to concealment in such a situation; the tendency to anastomosis of veins 11 and 12 in the fore wings appears to be a direct consequence of the narrowing and extension of the wings. It is quite certain that *Schœnobius* is truly derivable from *Hydrocampa*, and the intermediate steps are extant in Indian and Australian forms; nor is there here any trace of transition in the structural family characters, such as is shown in *Heliothela*, which approaches the true connecting-link between the families. *Chilo* is simply an aquatic *Crambus*. Although I have not used the ♂ genitalia as systematic characters, they may with advantage be examined in *Hydrocampa*, *Schœnobius*, *Scirpophaga*, and *Acentropus*, by those who doubt their near relationship; they will be found identical in the four genera.

gigantellus, Schiff.
forficellus, Thnb.
Alpherakii, Stgr.

49. Scirpophaga, *Tr.*

Face rounded, vertical; ocelli distinct; tongue very short or obsolete. Antennæ one-third to two-thirds, in ♂ filiform, ciliated (1—2). Labial palpi moderate or rather short, porrected, loosely scaled, terminal joint moderate or short. Maxillary palpi moderate, porrected, apex somewhat dilated with penicillate scales. Thorax in ♂ with patagia forming a rough erectly spreading tuft of hairs; abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs one-half to four-fifths of inner. Fore wings with

vein 7 from near 9, 8 and 9 stalked, 10 tolerably remote, 11 sometimes anastomosing with 12. Hind wings 1 or over 1; veins 4 and 5 somewhat approximated at base, 7 closely approximated to or out of 6 near origin, anastomosing with 8 to one-fifth to one-third.

Very closely allied to the preceding, and equally cosmopolitan.

prælata, Sc.
cinerea, Tr.

50. Acentropus, *Curt.*

Face rounded, vertical; ocelli distinct; tongue absent. Antennæ two-thirds, in ♂ filiform, ciliated (½). Labial palpi moderately long, porrected, dilated with rough projecting scales towards apex. Maxillary palpi very short, loosely scaled. Abdomen in ♂ without anal tuft. Posterior tibiæ with all spurs short and slender. Fore wings with vein 7 from near 9, 8 and 9 stalked, 10 tolerably remote. Hind wings 1; veins 4 and 5 approximated at base, 7 out of 6 near origin (but very faint and nearly obsolete at origin), anastomosing with 8 to beyond middle. Wings in ♀ sometimes much abbreviated or aborted.

Certainly a development of the preceding, from which it differs but little; a very small genus, characteristic of Europe, but possibly overlooked elsewhere. I do not know why there should ever have been any doubt about its position if structure is attended to, as it is perfectly clear. The statement that the tibiæ have no spurs, originally implied by Curtis's generic name, and repeated by Heinemann and others, is perhaps responsible; but it is quite erroneous, as they are distinctly developed, although very slender. I am not quite certain about the common origin of veins 6 and 7 of hind wings, as these veins become so very faint towards their base as to be hardly traceable, but the point cannot be of much importance here, as in *Scirpophaga* both forms are found sometimes in the same species.

niveus, Ol.; *Garnonsii*, Curt.; *Hansoni*, Stph.
latipennis, Möschl.
newæ, Kol.

2. MUSOTIMIDÆ.

Ocelli distinct or obsolete. Tongue well-developed. Maxillary palpi well-developed. Fore wings with vein 7 out of 8 or separate, 8 and 9 stalked. Hind wings without defined pecten of

hairs on lower margin of cell, 3 and 4 from a point or separate, 4 and 5 tolerably remote, 6 from angle of cell, 7 from upper margin of cell before 6 or rarely out of 6 near origin, anastomosing from 8.

This little family is characteristic of the coasts of the Western Pacific from Japan to New Zealand, but one species reaches as far back as Ceylon. It contains at present only three genera, and seems to be the remnant of a more extensive group, related by collateral development to the *Pyralididæ*.

51. Musotima, *Meyr.*

Face somewhat rounded, vertical; ocelli distinct; tongue well-developed. Antennæ two-thirds, in ♂ stout, subdentate, ciliated (½). Labial palpi moderately long, porrected or subascending, second joint with projecting scales beneath, terminal joint exposed, with rough scales beneath towards apex. Maxillary palpi moderate, dilated with rough scales, truncate. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with all spurs nearly equal. Fore wings with vein 7 separate, 9 and 10 rising out of 8, 11 short. Hind wings over 1; veins 3, 4, 5 remote, 6 from angle, 7 from considerably before angle, anastomosing with 8 from near origin to one-third.

A small genus, at present known from Ceylon, Australia, and New Zealand. Unfortunately I am not acquainted with the following East Siberian species, referred by Bremer to *Hydrocampa;* but his figure shows so much superficial resemblance to the typical species of this genus, that I venture to place it here provisionally; someone who possesses the insect will perhaps compare it with the characters given above.

**colonalis*, Brem.

3. PYRALIDIDÆ.

Ocelli present, often concealed by scales. Tongue well-developed, or sometimes obsolete. Maxillary palpi well-developed, or rarely rudimentary. Fore wings with vein 1 usually shortly or obscurely furcate at base, sometimes simple, 4 and 5 closely approximated at base or often stalked, 7 and 8 out of 9. Hind wings without defined pecten of hairs on lower margin of cell, veins 4 and 5 closely approximated at base or from a point or stalked, 7 out of 6 near origin or rarely separate but closely approximated, free or sometimes anastomosing with 8.

The earliest form of the family is the group of *Stericta*, formerly separated by me as a distinct family under the name of *Epipaschiadæ*, but I now recognise that this distinction is not tenable. From this group development has taken place in two principal lines; one through *Mnesixena*, *Synaphe*, *Endotricha* to *Acropentias*, the other through *Pyralis* to *Aglossa*. The family is nearly cosmopolitan, but of no great size; it is, however, unrepresented by indigenous species in New Zealand.

Tabulation of Genera.

1.	Hind wings with vein 8 anastomosing strongly with 7	2.
	Hind wings with vein 8 free or anastomosing extremely shortly	4.
2.	Fore wings with vein 10 out of 8	52. Acropentias.
	Fore wings with vein 10 rising separate	3.
3.	Thorax in ♂ with patagia very long, ending in long tuft of hairs	53. Endotricha.
	Thorax in ♂ with patagia normal	56. Lepidogma.
4.	Antennæ in ♂ bipectinated..	5.
	Antennæ in ♂ ciliated	8.
5.	Posterior tibiæ in ♂ with tuft of scales on basal joint	61. Xestula.
	Posterior tibiæ in ♂ without tuft	6.
6.	Basal joint of antennæ large, dilated with scales	55. Mnesixena.
	Basal joint of antennæ normal	7.
7.	Tongue obsolete	63. Aglossa.
	Tongue developed	54. Synaphe.
8.	Basal joint of antennæ in ♂ with horny projection	9.
	Basal joint of antennæ without horny projection	10.
9.	Crown in ♂ with long reflexed tuft of hairs ..	60. Craneophora.
	Crown in ♂ without reflexed tuft	59. Stericta.
10.	Basal joint of antennæ with projection of scales	11.
	Basal joint of antennæ without projection ..	62. Pyralis.
11.	Hind wings with vein 7 out of 6	58. Ulotricha.
	Hind wings with vein 7 rising separate	57. Hypotia.

52. Acropentias, n. g.

Face rounded; ocelli distinct; tongue short. Antennæ two-thirds, in ♂ dentate, ciliated (1). Labial palpi moderately long, subascending, second joint with long dense projecting scales beneath, forming an angular tuft at apex, terminal joint moderate, exposed, pointed. Maxillary palpi moderate, triangularly dilated

with dense scales. Abdomen in ♂ with small anal tuft. Posterior tibiæ with outer spurs one-half inner. Fore wings with vein 3 from considerably before angle, 4 and 5 stalked from angle, 7 out of 8 near base, 9, 10, and 11 out of 8. Hind wings 1; veins 4 and 5 stalked, 7 out of 6 near origin, anastomosing with 8 to middle.

This curious genus includes only one East Siberian species.

obtusalis, Christ. (*Sparagmia*).

53. Endotricha, *Z.*

Face rounded; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ ciliated or finely bipectinated, pectinations ending in tufts of cilia. Labial palpi moderate, ascending, second joint with rough projecting scales beneath, terminal joint short, exposed. Maxillary palpi very short, slender, or rudimentary. Thorax in ♂ with patagia much elongated, terminating in long tuft of hairs. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs one-third to one-half of inner. Fore wings with veins 4 and 5 from a point or stalked, 7 and 8 out of 9, 10 rather approximated to 9 towards base. Hind wings over 1; veins 4 and 5 from a point or stalked, 7 out of 6 near origin, anastomosing with 8 to one-third.

An Indo-Malayan genus of moderate size, ranging thence into Australia, Eastern Asia, and Africa, and one species reaching Europe.

flammealis, Schiff.
icelalis, Walk. (*icclusalis*); *flavofascialis*, Brem.
**costimaculalis*, Christ. (*costæmaculalis*).
**olivaccalis*, Brem.
**penicillalis*, Christ.

54. Synaphe, *Hb.*

Face rounded, sometimes with projecting scales; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ bipectinated, pectinations slender, often terminating in fascicles of cilia. Labial palpi very long, porrected, clothed with loose scales or sometimes with rough projecting hairs, attenuated forwards, terminal joint long, exposed. Maxillary palpi moderately long, more or less triangularly dilated with scales. Abdomen in ♂ with moderate anal tuft. Femora and tibiæ sometimes hairy; posterior tibiæ with outer spurs one-half to two-thirds of inner. Fore wings with vein 6 sometimes out of 9, 7 and 8 out of 9, 10 closely approximated to 9 towards base. Hind wings over 1; veins 4 and 5

approximated at base or stalked, 7 out of 6 near origin, approximated shortly to 8, or connected with it at a point only.

Characteristic of the European and Central Asiatic regions. It is by error that Lederer states the antennæ to be sometimes ciliated; they are pectinated in all species, but the pectinations are sometimes very slender. Both forms of the structure of vein 8 of the hind wings sometimes occur in the same species, though connection is much rarer.

pertusalis, Hb.
uxorialis, Ld.
bombycalis, Schiff.; *consessoralis*, Ersch.
moldavica, Esp.
consecratalis, Ld.
connectalis, Hb.
morbidalis, Gn.
interjunctalis, Gn.
isthmicalis, Ld.
**infumatalis*, Ersch.
armenialis, Ld.
**oculatalis*, Rag.
angustalis, Schiff.
brunnealis, Tr.
honestalis, Tr.
borgialis, Dup.

55. Mnesixena, n. g.

Face rounded, with slightly projecting scales; ocelli distinct; tongue short. Antennæ two-thirds, in ♂ bipectinated, basal joint large, dilated with scales, often with a small concealed horny projection on upper side. Labial palpi very long, porrected, with loose rough scales, attenuated forwards, terminal joint moderate. Maxillary palpi moderate, dilated with loose rough scales towards apex. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with spurs all long and nearly equal. Fore wings with veins 7 and 8 out of 9, or 8 and 9 out of 7, 10 rather approximated to 7 at base. Hind wings over 1; veins 4 and 5 stalked or separate, 7 out of 6 near origin, approximated shortly to 8.

A small genus, characteristic of Western Asia and the shores of the Mediterranean.

pectinalis, H.-S.
colchicalis, H.-S.
massilialis, Dup.
speciosalis, Christ.
**cribellalis*, Ersch.
**russulalis*, Christ.
concatenalis, Ld.

56. Lepidogma, n. g.

Face rounded; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ dentate, ciliated with fascicles, basal joint with very large apical projection of scales. Labial palpi moderately

long, subascending, second joint loosely scaled, terminal joint moderately long. Maxillary palpi rather short, dilated with scales towards apex. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs one-half inner. Fore wings with veins 4 and 5 from a point, 6 sometimes out of 9, 7 and 8 out of 9, 10 and 11 sometimes anastomosing shortly. Hind wings over 1; veins 4 and 5 approximated at base, 7 out of 6 near origin, anastomosing with 8 to two-fifths.

A development of the preceding, containing only one species from Western Asia and the Mediterranean.

tamaricialis, Mn.; *? obatralis*, Christ.

57. Hypotia, *Z.*

Face rounded; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ dentate, ciliated with fascicles, basal joint large, with apical projection of scales. Labial palpi moderately long, porrected, second joint with apical projecting tuft of scales beneath, terminal joint moderate, exposed. Maxillary palpi moderate, dilated with scales towards apex. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs one-half inner. Fore wings with veins 7 and 8 out of 9, 10 approximated to 9 at base. Hind wings over 1; veins 4 and 5 approximated at base, 7 from very near 6, approximated shortly to 8.

Allied to *Mnesixena;* attached to the shores of the Mediterranean.

corticalis, Schiff.
**proximalis*, Christ.
**infulalis*, Ld.

58. Ulotricha, *Ld.*

Face rounded; ocelli distinct; tongue short. Antennæ two-thirds, in ♂ subdentate, ciliated with long fascicles (3), basal joint with projection of scales in front. Labial palpi moderate, subascending, second joint shortly rough-scaled beneath, terminal joint moderate, exposed. Maxillary palpi rudimentary. Abdomen in ♂ with moderate anal tuft. Middle tibiæ dilated with rough scales; posterior tibiæ with outer spurs two-thirds of inner. Fore wings with veins 4 and 5 from a point, 8 and 9 out of 7, 10 from near 7. Hind wings over 1; veins 4 and 5 stalked, 7 out of 6 near origin, approximated shortly to 8.

Nearly allied to *Hypotia;* it contains one Mediterranean species.

egregialis, H.-S.

59. Stericta, *Ld.*

Face rounded; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ ciliated, basal joint with a long densely scaled erect or reflexed horny process. Labial palpi moderately long, curved, ascending, second joint with appressed scales, sometimes expanded at apex, terminal joint rather short, pointed. Maxillary palpi rather short, filiform, in ♂ terminating in a long pencil of hairs. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs one-half inner. Fore wings with veins 4 and 5 approximated or from a point or stalked, 7 and 8 out of 9, 10 approximated to 9 towards base. Hind wings over 1; veins 4 and 5 approximated or from a point or stalked, 7 out of 6 near origin, approximated shortly to 8 or rarely connected at a point or very shortly anastomosing.

A genus of moderate size, principally developed in the Indo-Malayan region and Australia, but also found in North America; the position of the following East Siberian species cannot be assured in the absence of the ♂, but is almost certain.

inimica, Butl.; *amurensis*, Stgr. MS. (*Aglossa*).

60. Craneophora, *Christ.*

Face rounded, crown in ♂ with long recurved tuft of hairs ocelli concealed (?); tongue developed. Antennæ two-thirds, in ♂ filiform, ciliated, basal joint with a short horny projection in front. Labial palpi rather long, curved, ascending, second joint with dense appressed scales (said to have a tuft of hairs in ♂, probably in error). Maxillary palpi (said to be absent, but probably) filiform, in ♂ terminating in a long pencil of hairs. Posterior tibiæ with outer spurs one-half inner. Fore wings with veins 7 and 8 out of 9. Hind wings with veins 4 and 5 approximated at base, 7 out of 6 near origin, approximated shortly to 8.

Apparently closely allied to the preceding, and containing one East Siberian species. I have not been able to see it, and the above generic characters are taken from Christoph, but whether they are trustworthy is very doubtful. I have ventured to make one conjectural correction; the tuft of yellowish hairs said to be attached to the labial palpi of the ♂ is probably the maxillary palpi, which are said to be absent, but probably lie concealed between the labial, as in the preceding genus.

One of the veins of the fore wing (10 or 11) is not alluded to by Christoph, but is probably overlooked.

**Ficki*, Christ.

61. Xestula, *Snell.*

Face somewhat rounded, oblique, with somewhat projecting scales; ocelli distinct; tongue developed. Antennæ one-half, in ♂ bipectinated, towards apex simple, basal joint with apical projection of scales in front. Labial palpi moderate, porrected, second joint with rough projecting scales beneath towards apex, terminal joint short, concealed. Maxillary palpi rather short, dilated with loose scales towards apex. Thorax in ♂ with very large expansible pencil of hairs from shoulders beneath. Abdomen in ♂ with moderate anal tuft, and apical lateral pencils of scales. Posterior tibiæ in ♂ with rough projecting scales, outer spurs one-half inner, posterior tarsi in ♂ with tuft of scales at apex of basal joint above (anterior and middle legs broken). Fore wings with vein 1 with long basal furcation, 4 and 5 closely approximated towards base, 7 and 8 out of 9, 10 approximated to 9 towards base. Hind wings over 1; veins 4 and 5 from a point, 7 out of 6 near origin, approximated shortly to 8.

Intermediate between the preceding group and *Pyralis*; it includes only the following East Siberian species.

miraculosa, Snell.

62. Pyralis, *L.*

Face rounded, with rather projecting scales; ocelli distinct or concealed; tongue developed. Antennæ two-thirds, in ♂ filiform, serrulate, or dentate, ciliated (1—2). Labial palpi moderately long, porrected or ascending, second joint with appressed or rough projecting scales, terminal joint moderate or short, exposed. Maxillary palpi short or moderate, tolerably filiform or apex dilated with loose penicillate scales. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs one-half inner. Fore wings with veins 4 and 5 from a point or stalked, 7 and 8 out of 9, 10 rather approximated to 9 towards base. Hind wings over 1; veins 4 and 5 from a point or stalked, 7 out of 6 near origin, approximated shortly to 8.

A cosmopolitan genus, but some of the species owe their wide range to artificial introduction. I have here included *Stemmatophora*, Gn.; it is supposed to be distinguished from *Pyralis* by the presence of ocelli, but I

find them to be present in all species alike, though in some more exposed and conspicuous. *P. pictalis*, Curt., which I have not mentioned in the list of species, is excluded as an exotic, only inserted in the European lists by an error of habitat, or perhaps an accidental and purely temporary introduction.

rubidalis, Schiff.
fulvocilialis, Dup.
**incarnatalis*, Z.
glaucinalis, L.
costalis, F.
regalis, Schiff.
lienigialis, Z.
farinalis, L.; *domesticalis*, Z. (cert.).
**fuscolimbalis*, Rag.
**leonalis*, Oberth.
combustalis, F. R.
subustalis, Ld.
**gadesialis*, Rag.
perversalis, H.-S.
obsoletalis, Mn.

63. Aglossa, *Latr.*

Face rounded; ocelli distinct or concealed; tongue obsolete. Antennæ two-thirds, in ♂ bipectinated, pectinations slender. Labial palpi moderately long, porrected or subascending, second joint with dense rough projecting scales beneath, terminal joint moderate, exposed. Maxillary palpi moderate, apex with loose penicillate scales. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs one-half inner. Fore wings with veins 4 and 5 from a point or stalked, 7 and 8 out of 9, 10 approximated to 9 towards base. Hind wings over 1; veins 4 and 5 stalked, 7 out of 6 near origin, approximated shortly to 8.

Now nearly cosmopolitan, but probably by artificial introduction. The antennæ of the ♂ are always said to be ciliated, but are really bipectinated, the pectinations being very fine, as in some species of *Synaphe*.

pinguinalis, L.
cuprealis, Hb.
**exsucealis*, Ld.
**signicostalis*, Stgr.

4. PHYCITIDÆ.

Ocelli distinct or rarely concealed. Tongue well-developed or rudimentary. Maxillary palpi well-developed or rudimentary, not triangular. Fore wings with vein 1 simple, or obsoletely furcate, 4 and 5 closely approximated at base or stalked, 7 absent (coincident with 8), 8 and 9 stalked. Hind wings with defined pecten of hairs on lower margin of cell, veins 4 and 5 closely approximated at base or stalked or coincident, 7 out of 6 near origin, anastomosing with 8 or free.

This family is an early offshoot of the immediate ancestors of the *Pyralididæ*. It is cosmopolitan, but especially attached to warm countries. As mentioned above, in courtesy to M. Ragonot, I do not propose to enter into the classification of this and the following family until his monograph is published.

5. GALLERIADÆ.

Ocelli distinct or concealed. Tongue well-developed or obsolete. Maxillary palpi more or less developed, not triangular. Fore wings with vein 1 usually furcate at base, 4 and 5 closely approximated at base or stalked, 7 rising out of 8, 8 and 9 stalked. Hind wings with defined pecten of hairs on lower margin of cell, veins 4 and 5 closely approximated at base or stalked or coincident, 7 out of 6 near origin, anastomosing with 8 or free.

A small family, but nearly cosmopolitan. Like the preceding, it is an early development from the ancestors of the *Pyralididæ*.

6. CRAMBIDÆ.

Ocelli distinct or concealed, or rarely obsolete. Tongue well-developed, or rarely obsolete. Labial palpi long, straight, porrected. Maxillary palpi well-developed, strongly triangularly dilated with scales. Fore wings with vein 1 simple or obsoletely furcate, 4 and 5 closely approximated at base or stalked, 7 separate or out of 8, 8 and 9 stalked or rarely coincident. Hind wings with defined pecten of hairs on lower margin of cell, veins 4 and 5 from a point or stalked or coincident or rarely only approximated at base, 7 out of 6 near origin or approximated or widely remote, anastomosing with 8 or very rarely free.

A family of considerable size and universal distribution. The earliest existing form is probably *Diptychophora*, which shows the aboriginal character of a well-marked separation at origin of veins 4 and 5 of the hind wings; from this there are two lines of descent, one through *Talis* to *Ancylolomia*, now represented by very few species except in Australia, where *Talis* is dominant, and the other through *Euchromius* to *Crambus*. The uniformity of the palpi in this family is very remarkable.

Tabulation of Genera.

1.	Fore wings with vein 7 rising out of 8	2.
	Fore wings with vein 7 separate	4.
2.	Hind wings with vein 7 rising out of 6	3.
	Hind wings with vein 7 widely remote	64. Ancylolomia.
3.	Ocelli concealed	71. Calamotropha.
	Ocelli exposed, distinct	70. Crambus.
4.	Hind wings with veins 4 and 5 separate at origin	66. Diptychophora.
	Hind wings with veins 4 and 5 from a point or stalked	5.
5.	Hind wings with vein 7 out of 6 or rarely closely approximated	6.
	Hind wings with vein 7 widely remote from 6 ..	65. Talis.
6.	Fore wings in ♂ with semitransparent patch in cell..	67. Euchromius.
	Fore wings in ♂ without semitransparent patch	7.
7.	Face with conical horny projection	68. Chilo.
	Face without projection	69. Platytes.

64. Ancylolomia, *Hb.*

Face rounded; ocelli distinct; tongue obsolete. Antennæ two-thirds, in ♂ flattened-dentate, ciliated (¼), or unipectinated. Labial palpi long, porrected, clothed with loose rough scales, attenuated forwards. Maxillary palpi moderate, triangularly dilated with scales towards apex. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs one-half to two-thirds of inner. Fore wings with veins 7 and 8 out of 9, 10 rather approximated to 9 towards base, 11 running into 12. Hind wings 1¼; veins 4 and 5 closely approximated or stalked, 7 remote from 6, anastomosing very shortly with 8.

A small genus, ranging over South Europe, the Indo-Malayan region, and Africa.

contritella, Z.
tentaculella, Hb.
pectinatella, Z.
**inornata*, Stgr.
palpella, Schiff.

65. Talis, *Gn.*

Face with horny projection; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ dentate, ciliated or bipectinated. Labial palpi long, porrected, dilated with loose rough scales, attenuated forwards. Maxillary palpi moderate, triangularly dilated with scales towards apex. Abdomen in ♂ with moderate anal tuft.

Posterior tibiæ with outer spurs one-half inner. Fore wings with veins 4 and 5 separate or stalked, 7 separate, 8 and 9 stalked, 10 tolerably remote, 11 sometimes bent. Hind wings 1¼—1½; veins 4 and 5 from a point, stalked, or rarely coincident, 7 remote from 6, anastomosing more or less with 8, rarely with inner margin in ♂ lobed and furnished with hair-pencil.

Perhaps not yet sufficiently recognised; it is well-developed and dominant in Australia, where it takes the place of *Crambus;* stragglers are found in New Zealand, the Hawaiian Islands, Central Asia, and Europe. *Hednota*, Meyr., is a synonym.

pulcherrima, Stgr.
quercella, Schiff.
**arenella*, Rag.
**subscissa*, Christ.

66. Diptychophora, *Z.*

Face rounded; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ shortly ciliated. Labial palpi moderately long, porrected, dilated with loose rough scales, attenuated forwards. Maxillary palpi moderate, triangularly dilated with scales towards apex. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs one-half inner. Fore wings with vein 7 separate, 8 and 9 stalked, 10 tolerably remote, 11 running into 12 or free, but bent so as to be closely approximated to 12. Hind wings 1¼; vein 4 from a point with 3 or absent (coincident), 5 more or less remote at origin from 4, 7 remote from 6 at origin, anastomosing with 8 to one-third.

Whether the following species is truly referable here, I cannot certainly state, but it seems not unlikely. The genus is well-developed in New Zealand, and species occur in Australia and South America; the subjoined species is Asiatic.

**exsectella*, Christ.

67. Euchromius, *Gn.*

Face with conical horny projection; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ serrate, ciliated (½). Labial palpi long, porrected, clothed with loose scales, attenuated forwards. Maxillary palpi moderate, triangularly dilated with scales towards apex. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs one-half inner. Fore wings with vein 7 separate, 8 and 9 stalked, 10 more or less remote, in ♂ with a

semitransparent patch in cell towards base. Hind wings $1\frac{1}{4}$; veins 4 and 5 stalked, 7 out of 6 near origin, anastomosing with 8 to near middle.

A small genus characteristic of the coasts of the Mediterranean, but one species has now spread very widely in other regions, probably, as I have explained elsewhere, by artificial introduction. Hübner's name *Eromene*, commonly used for this genus, cannot stand, as Hübner himself used the same name for a genus of *Noctuina* (=*Thalpochares*, Ld., which it supersedes) earlier in the same volume.

bellus, Hb.
zonellus, Z.
wockeellus, Z.
ramburiellus, Z.
superbellus, Z.
anapiellus, Z.
vinculellus, Z.
ocelleus, Hw.
**latus*, Stgr.
**jaxartellus*, Ersch.
**pulverosus*, Roman.

68. Chilo, *Zk.*

Face with conical horny projection; ocelli distinct or concealed; tongue short. Antennæ two-thirds, in ♂ subdentate, ciliated ($\frac{1}{2}$). Labial palpi very long, porrected, clothed with loose rough scales, attenuated forwards. Maxillary palpi moderately long, porrected, triangularly dilated with scales towards apex. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs three-fourths of inner. Fore wings with vein 7 from near 8, 8 and 9 stalked, 10 approximated to 9 towards base, 11 bent. Hind wings $1\frac{1}{4}$; veins 4 and 5 from a point or stalked, 7 closely approximated to or from a point with 6, anastomosing with 8 to about middle.

A small genus of pretty general distribution.

phragmitellus, Hb.
cicatricellus, Hb.

69. Platytes, *Gn.*

Face rounded; ocelli distinct; tongue developed. Antennæ two-thirds, in ♂ subdentate, ciliated ($\frac{1}{2}$). Labial palpi very long, porrected, clothed with loose rough scales, attenuated forwards. Maxillary palpi moderately long, triangularly dilated with scales towards apex. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs two-thirds to three-fourths of inner. Fore wings with vein 7 from near 8, 8 and 9 stalked or sometimes coincident, 10 remote. Hind wings $1\frac{1}{4}$; veins 4 and 5 stalked or coincident, 7 out of 6 near origin, anastomosing with 8 to beyond middle.

Whether any species outside the European fauna are justly referable here is perhaps as yet not clearly ascertained.

alpinella, Hb.
carectella, Z.
**pallidella*, Dup.
**lugdunella*, Mill.
cerussella, Schiff.

70. Crambus, *F.*

Face rounded, sometimes more or less prominent or forming a pointed horny cone; ocelli exposed, distinct; tongue developed. Antennæ two-thirds, in ♂ dentate or filiform, ciliated ($\frac{1}{3}$—1) or rarely shortly bipectinated. Labial palpi very long, porrected, clothed with loose rough scales, attenuated forwards. Maxillary palpi moderately long, triangularly dilated with scales towards apex. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs one-half to two-thirds of inner. Fore wings with veins 4 and 5 separate, from a point, or stalked, 7 and 8 out of 9, or 8 sometimes absent (coincident), 10 approximated to 9 towards base or sometimes out of 9 near base, 11 rather bent, sometimes connected with 12 at a point. Hind wings about $1\frac{1}{2}$; veins 4 and 5 from a point or stalked, 7 out of 6 near origin, anastomosing with 8 to about middle, or rarely shortly only.

Probably the largest genus of the whole group, being plentifully represented in all regions except Australia, where there are no indigenous species, and the Indo-Malayan region, where there are comparatively few. Although showing considerable variation in structure, it will certainly not admit of subdivision. In the frontal structure every transitional form occurs, and it is impossible to draw a line; transitional forms between the dentate and pectinated antennæ are also found, as in *Talis*; and the various differences in neural structure are all found in different specimens of the same species.

candiellus, H.-S.
malacellus, Dup.; *hapaliscus*, Z.; *concinnellus*, Walk.
argyrophorus, Butl.
hamellus, Thnb.
argentarius, Stgr.
uliginosellus, Z.
pascuellus, L.
cricellus, Hb.
silvellus, Hb.
splendidellus, Christ.
dumetellus, Hb.
**nemorellus*, Hb.
palustrellus, Rag. (? = præc.)

pratellus, L.
alienellus, Zk.
heringiellus, H.-S.
Kobelti, Saalm.
textellus, Christ.
culmellus, L.
hortuellus, Hb.
lucellus, H.-S.
craterellus, Sc.
chrysonuchellus, Sc.
biarmicus, Tgst.
maculalis, Zett.
truncatellus, Zett.
trichostomus, Christ.
mandschuricus, Christ.
vigens, Butl.; *fucatellus*, Christ.
falsellus, Schiff.
verellus, Zk.
incertellus, H.-S.
confusellus, Stgr.
**Staudingeri*, Z.
corsicellus, Dup.
dimorphellus, Stgr.
luctiferellus, Hb.
**permutatellus*, H.-S.
speculalis, Hb.
myellus, Hb.
**colchicellus*, Ld.
mytilellus, Hb.
pinellus, L.
conchellus, Schiff.
pauperellus, Tr.
pyramidellus, Tr.
margaritellus, Hb.
furcatellus, Zett.
radiellus, Hb.
monotæniellus, H.-S.
**vectifer*, Z.
latistrius, Hw.
fulgidellus, Hb.
saxonellus, Zk.
aureliellus, F. R.; *immaturellus*, Christ.
**delicatellus*, Z.
perlellus, Sc.; *rostellus*, Lah.; *languidellus*, Z.
lævigatellus, Ld.
zermattensis, Frey.
combinellus, Schiff.
**petrificellus*, Dup.
coulonellus, Dup.
**orientellus*, H.-S.
subflavellus, Dup.
**Kindermanni*, Z.
spuriellus, Hb.
digitellus, H.-S.
pudibundellus, H.-S.
fascelinellus, Hb.; *jucundellus*, H.-S.; *ramosellus*, Z.
acutangulellus, H.-S.
**italellus*, Cost.
**cyrenaicellus*, Rag.
**profluxellus*, Roman.
**paleatellus*, Z.
trabeatellus, H.-S.
inquinatellus, Schiff.
siculellus, Dup.
**tersellus*, Ld.
desertellus, Ld.
geniculeus, Hw.
salinellus, Tutt.
contaminellus, Hb.
matricellus, Tr.
poliellus, Tr.
deliellus, Hb.
lithargyrellus, Hb.
ossellus, Stgr., List XXXIII.
tristellus, F.
selasellus, Hb.
**æneociliellus*, Ev.
luteellus, Schiff.

71. Calamotropha, *Z.*

Face with short prominence; ocelli present, concealed; tongue developed. Antennæ two-thirds, in ♂ ciliated. Labial palpi very long, porrected, clothed with loose rough scales, attenuated forwards. Maxillary palpi moderately long, triangularly dilated with scales towards apex. Abdomen in ♂ with moderate anal tuft. Posterior tibiæ with outer spurs two-thirds of inner. Fore wings with veins 4 and 5 separate, 7 and 8 out of 9, 10 approximated to 9 towards base. Hind wings about $1\frac{1}{3}$; veins 4 and 5 from a point, 7 out of 6 near origin, anastomosing with 8 to about middle.

This genus is only separable from *Crambus* by the ocelli, which are completely concealed by scales, whereas in *Crambus* they are always clear, exposed, and conspicuous. This seems sufficient under the circumstances. The genus contains only a few widely scattered species.

paludella, Hb.
**hierochuntica*, Z.

7. PTEROPHORIDÆ.

Ocelli usually concealed or obsolete, rarely distinct. Tongue well-developed. Maxillary palpi obsolete. Fore wings with vein 1 simple or shortly furcate, 5 remote from 4, 7 separate or out of 8 or absent, 8 and 9 stalked or coincident or rarely separate (*Agdistis*), 10 and 11 sometimes out of 9 or absent, wing usually fissured, forming two or rarely three or four segments. Hind wings without defined pecten of hairs on lower margin of cell, vein 5 remote from 4, vein 7 remote from 6, approximated shortly to 8 beyond origin, wing usually fissured, forming three segments.

This family, which is of considerable size and cosmopolitan, appears to be of very early origin. The Australian family *Oxychirotidæ*, which probably consists of the remnants of a collateral branch of development, supplies forms quite intermediate in character between the *Pterophoridæ* and other *Pyralidina*, including species with ordinary entire triangular wings, with absolutely linear wings, and with wings divided each into two segments. I have formerly stated the *Pterophoridæ* to possess no ocelli, but I now find that they are present in some of the earliest forms, as *Agdistis*, though usually obsolete. The exceptional separation of veins 8 and 9 of the fore wings is referred to under *Agdistis*. All the species of this family show a more or less developed

double row of short spine-like dark scales on lower margin of cell in disc beneath. The development of the family has proceeded on two lines, the ancestral form being near to *Agdistis;* one line being by way of *Platyptilia* and *Oxyptilus* to *Trichoptilus*, the other through *Stenoptilia*, *Alucita*, and *Crasimetis* to *Pterophorus*. The extreme genera of both lines have the neuration much degraded.

Tabulation of Genera.

1.	Wings entire	75. Agdistis.
	Wings fissured	2.
2.	Hind wings with more or less developed tooth of black scales in dorsal cilia	3.
	Hind wings without black scales in dorsal cilia	5.
3.	Fore wings with veins 7 and 9 absent	72. Trichoptilus.
	Fore wings with veins 7 and 9 present.. ..	4.
4.	Fore wings with vein 10 rising out of 8 ..	73. Oxyptilus.
	Fore wings with vein 10 separate	74. Platyptilia.
5.	Fore wings with all veins present	76. Stenoptilia.
	Fore wings with one or more veins absent ..	6.
6.	Fore wings with vein 10 separate	7.
	Fore wings with vein 10 out of 8 or absent ..	8.
7.	Fore wings with vein 7 out of 8	79. Gypsochares.
	Fore wings with vein 7 separate	77. Alucita.
8.	Fore wings with veins 3 and 7 absent	81. Pterophorus.
	Fore wings with veins 3 and 7 present ..	9.
9.	Fore wings with vein 11 out of 8	80. Crasimetis.
	Fore wings with vein 11 separate	78. Marasmarcha.

72. Trichoptilus, *Wlsm.*

Face without tuft, rounded; ocelli obsolete; tongue developed. Antennæ two-thirds, in ♂ ciliated ($\frac{1}{3}$—$\frac{2}{3}$). Labial palpi moderate, ascending, second joint with short projecting scales beneath, tending to form a short angular apical tuft, terminal joint short or long, filiform, tolerably pointed. Maxillary palpi obsolete. Tibiæ thickened with scales on origin of spurs, outer spurs nearly equal inner. Fore wings bifid, cleft from before middle; vein 2 out of 4 or absent, 3 absent, 5 and 6 extremely short, 7 absent, 9 absent, 10 from near 8 or absent, 11 from near 8, long. Hind wings trifid, third segment with more or less developed tooth of black scales in dorsal cilia, often slight; vein 2 from middle of cell, 3 absent, 5 and 6 very short, 7 to apex.

A genus of limited extent, but cosmopolitan; more species are known from Australia than any other region.

siceliota, Z.
paludum, Z.

73. Oxyptilus, *Z.*

Face rounded, smooth or with small tuft; ocelli obsolete; tongue developed. Antennæ two-thirds, in ♂ filiform, simple or ciliated ($\frac{1}{4}$—$\frac{1}{2}$). Labial palpi moderate, ascending, second joint with appressed or projecting scales beneath, sometimes forming a short angular apical tuft, terminal joint moderate, filiform, tolerably acute. Maxillary palpi obsolete. Tibiæ thickened with scales on origin of spurs, outer spurs nearly equal inner. Fore wings bifid, cleft from about middle; vein 2 from a point with 4, 3 and 4 stalked, 5 and 6 very short, 7 from below 8, long, 9 and 10 out of 8, 11 from near 8. Hind wings trifid, third segment with a well-developed tooth of black scales in dorsal cilia; vein 2 from middle of cell, 3 from near angle, very short, 5 and 6 very short, 7 to apex.

This genus is especially characteristic of Europe, but stragglers have spread thence into the surrounding regions.

lætus, Z.
distans, Z.
tristis, Z.
Kollari, Stt.
pilosellæ, Z.
Hofmannseggii, Möschl.
parvidactylus, Hw.
**Bohemanni*, Wallgr.
marginellus, Z.
ericetorum, Z.
**maculatus*, Const.
hieracii, Z.
teucrii, Greening.
didactylus, L.; *? brunneodactylus*, Mill.

74. Platyptilia, *Hb.*

Face with projecting tuft of scales, rarely absent; ocelli obsolete; tongue developed. Antennæ two-thirds, in ♂ ciliated ($\frac{1}{4}$—1). Labial palpi rather long, obliquely ascending, second joint loosely scaled, terminal joint moderate, porrected, filiform. Maxillary palpi obsolete. Tibiæ simple or somewhat tufted on origin of spurs and centre of middle tibiæ, outer spurs nearly equal inner. Fore wings bifid, cleft from two-thirds to three-fourths; vein 2 from much before angle, 3 from near angle, 5 and 6 short, 7 from below 8, 8 and 9 stalked, 10 from near 9, 11 remote. Hind wings trifid, third segment with well-developed tooth of black scales in dorsal cilia; vein 2 from middle of cell, 3 from near angle, 5 and 6 short, 7 and 8 divergent from beyond cleft.

A genus of considerable size, and quite cosmopolitan.

cosmodactyla, Hb.
acanthodactyla, Hb.
tesseradactyla, L.
farfarella, Z.
gonodactyla, Schiff.
Metzneri, Z.
Zetterstedtti, Z.
similidactyla, Dale.
nemoralis, Z.; *isodactyla*, Z.
Bertrami, Rössl.
ochrodactyla, Hb.
**capnodactyla*, Z.
rhododactyla, F.

75. Agdistis, *Hb.*

Face with more or less developed horny prominence; ocelli distinct; tongue developed. Antennæ four-fifths, in ♂ filiform, shortly ciliated. Labial palpi moderate, ascending, second joint with rough projecting scales beneath, terminal joint short. Maxillary palpi obsolete. Tibiæ simple, outer spurs one-half inner. Fore wings entire; vein 2 from near angle, 3 and 4 approximated or stalked, 5 widely remote from 4, from near middle of transverse vein, 7 from near 8, 8 and 9 stalked, 10 from near 8, or sometimes 8 separate, 9 and 10 stalked, or all three separate. Hind wings entire, on lower margin of cell beneath with a pecten of dense scales in disc, and inner margin roughened beneath with scales; vein 2 from middle of cell, 3 and 4 approximated at base, 5 absent, 6 remote from 7, 8 shortly approximated to 7, posteriorly divergent.

A European genus, extending into Africa. It is small and compact, immediately separable from the whole of the family, and all the species are very similar superficially, but it includes remarkable variations in structure. I believe, however, that these will eventually be connected by transitional forms, and that there is no necessity for generic subdivision, nor have I at present been able to obtain as much material for examination as I could wish. The occasional separation of veins 8 and 9 of the fore wings is only paralleled in this group in the *Siculodidæ*. In the roughened dark scales on the under surface of the inner margin of hind wings may be seen the origin of the black scale-teeth of the preceding genera. The differences in the frontal prominence, which are considerable, are of value in specific distinction.

satanas Mill.
adactyla, Hb.
**manicata*, Stgr.
Heydenii, Z.
meridionalis, Z.
**frankeniæ*, Z.
paralia, Z. (? = seq.)
tamaricis, Z.
Bennetii, Curt.

76. Stenoptilia, *Hb.*

Face with projecting tuft or conical horny prominence; ocelli distinct or concealed; tongue developed. Antennæ two-thirds, in ♂ ciliated ($\frac{3}{4}$—1). Labial palpi moderately long, porrected, second joint with tolerably appressed or loose rough scales, sometimes expanded towards apex, terminal joint moderate or short, tolerably filiform. Maxillary palpi obsolete. Tibiæ simple, outer spurs almost equal inner. Fore wings bifid, cleft from about two-thirds; vein 2 from two-thirds of cell, 3 from near angle, 5 and 6 short, 7 from near 8, 8 and 9 stalked, 10 from near 9, 11 tolerably remote. Hind wings trifid, third segment without black scales in dorsal cilia; vein 2 from before middle of cell, 3 from before angle, 5 and 6 very short, 7 and 8 divergent from beyond cleft.

A nearly cosmopolitan genus of some size.

miantodactyla, Z.
pelidnodactyla, Stein.
serotina, Z.
zophodactyla, Dup.
**islandica*, Stgr.
arida, Z.
coprodactyla, Z.
**Nolckeni*, Tgstr.
plagiodactyla, Stt.
**lutescens*, H.-S.
graphodactyla, Tr.
pterodactyla, L.
paludicola, Wallgr.
stigmatodactyla, Z.
**Mannii*, Z.

77. Alucita, *L.*

Face rounded, without tuft; ocelli concealed or obsolete; tongue developed. Antennæ two-thirds, in ♂ ciliated ($\frac{3}{5}$—1). Labial palpi moderate, ascending, loosely scaled or tolerably smooth, terminal joint short, obtuse or pointed. Maxillary palpi obsolete. Tibiæ simple, or thickened with scales on origin of spurs and centre of middle tibiæ, outer spurs two-thirds to three-fourths of inner, or almost equal. Fore wings bifid, cleft from about two-thirds; vein 2 from about four-fifths of cell, 3 and 4 from a point, 5 and 6 short, 7 from near 8, 9 absent, 10 approximated to 8 towards base, 11 from rather near 8. Hind wings trifid, third segment without black scales in dorsal cilia; vein 2 from about middle of cell, 3 absent, 5 and 6 very short, 7 and 8 divergent from beyond cleft.

Principally European and American, with stragglers in other regions. The variation in scaling of the tibiæ (and occasionally of the tarsi also) is specific merely, and quite insufficient for generic distinction.

lithodactyla, Tr.
gigantea, Mn.
Rogenhoferi, Mn.
Constanti, Rag.
monodactyla, L.
scarodactyla, Hb.
lienigiana, Z.
tephradactyla, Hb.
distincta, H.-S.
inulæ, Z.
carphodactyla, Hb.
**coniodactyla*, Stgr.
pectodactyla, Stgr.
ostcodactyla, Z.

78. Marasmarcha, *Meyr.*

Face with more or less projecting tuft; ocelli obsolete; tongue developed. Antennæ two-thirds, in ♂ ciliated (⅓). Labial palpi moderate, ascending, slender, terminal joint moderate, pointed. Maxillary palpi obsolete. Tibiæ simple, outer spurs nearly equal inner. Fore wings bifid, cleft from before two-thirds; vein 2 from near angle, 3 and 4 from a point or stalked, 5 and 6 short, 7 from near 8, 8 and 9 stalked, 10 absent, 11 from near angle. Hind wings trifid, third segment without black scales in dorsal cilia; vein 2 from before middle of cell, 3 absent, 5 and 6 very short, 7 and 8 divergent from beyond cleft.

A small genus, occurring in Europe, Central Asia, and Africa. It closely approaches the preceding, and is a development from it.

**ehrenbergiana*, Z.
agrorum, H.-S.
**rhypodactyla*, Stgr.
**trimmatodactyla*, Christ.
phæodactyla, Hb.
cinnamomea, Stgr.
microdactyla, Hb.

79. Gypsochares, n. g.

Face without tuft; ocelli obsolete; tongue developed. Antennæ two-thirds, in ♂ ciliated (1). Labial palpi moderate, subascending, second joint loosely scaled, somewhat tufted at apex beneath, terminal joint moderate. Maxillary palpi obsolete. Tibiæ hardly thickened, outer spurs nearly equal inner. Fore wings bifid, cleft from three-fifths; vein 2 from a point with 4, 3 out of 4, 5 and 6 very short, upper angle of cell produced, 7 out of 8, 9 absent, 10 separate, approximated to 8, 11 tolerably remote. Hind wings trifid, third segment without black scales in dorsal cilia; vein 2 from middle of cell, 3 absent, 5 and 6 very short, 7 to apex.

Includes at present only the following South European species.

baptodactyla, Z.

80. Crasimetis, n. g.

Face without tuft; ocelli obsolete; tongue developed. Antennæ two-thirds, in ♂ ciliated (⅔). Labial palpi moderate, ascending, loosely scaled, terminal joint short, pointed. Maxillary palpi obsolete. Tibiæ thickened with scales on origin of spurs, outer spurs almost equal inner. Fore wings bifid, cleft from about middle; veins 2 and 3 out of 4, 5 and 6 short, 7 absent, 9, 10 and 11 out of 8. Hind wings trifid, third segment without black scales in dorsal cilia; vein 2 from middle of cell, 3 absent, 5 and 6 short, 7 and 8 divergent from beyond cleft.

I know only the two following species, of which one is European, the other East Siberian. It is an interesting genus, as being obviously the ancestral form of *Pterophorus*.

brachydactyla, Tr.
amurensis, Christ.

81. Pterophorus, *Geoffr.*

Face without tuft; ocelli obsolete; tongue developed. Antennæ two-thirds, in ♂ ciliated (½—1). Labial palpi moderate, more or less ascending, filiform, second joint sometimes loosely scaled, terminal joint moderate or short, acute. Maxillary palpi obsolete. Tibiæ simple, outer spurs almost equal inner. Fore wings bifid, cleft from about middle; vein 2 from near angle or out of 4, or absent, 3 absent, 5 and 6 very short, 7 absent, 9 absent, 10 absent, 11 from a point with or out of 8 or absent. Hind wings trifid, third segment without black scales in dorsal cilia; vein 2 from middle of cell, 3 absent, 5 and 6 very short, 7 to apex.

A considerable genus, nearly cosmopolitan, but no truly indigenous species occurs in Australia.

caspius, Ld.
volgensis, Möschl.
spilodactylus, Curt.
galactodactylus, Hb.
**subalternans*, Ld.
phlomidis, Stgr.
pentadactylus, L.
confusus, H.-S.
punctinervis, Const.
xanthodactylus, Tr.
xerodactylus, Z.
**decipiens*, Ld.
baliodactylus, Z.
calcarius, Ld.
parthicus, Ld.
semiodactylus, Mn.

**marptys*, Christ.
tetradactylus, L.
malacodactylus, Z.
**chordodactylus*, Stgr.
icterodactylus, Mn.
ischnodactylus, Tr.
**desertorum*, Z.
**olbiadactylus*, Mill.
**nephelodactylus*, Ev.

8. ORNEODIDÆ.

Ocelli distinct. Tongue developed. Maxillary palpi obsolete. Fore wings six-cleft, cell very short, vein 5 absent, 7 separate, 8 and 9 coincident. Hind wings six-cleft, cell very short, 5 absent, 7 out of 6 near origin, 8 free.

The family consists only of the one genus. It stands quite isolated, the earlier connecting forms being apparently all extinct. Owing to the great degeneration of the veins, and the absence of earlier forms, it is impossible to fully trace its affinities, but there can be no doubt that it is a development parallel to the *Pterophoridæ*, but very distinct from that family.

82. Orneodes, *Latr.*

Face with projection of scales; ocelli distinct; tongue developed. Antennæ three-fifths, in ♂ minutely ciliated (¼). Labial palpi long, obliquely ascending, second joint with rough projecting scales beneath, more or less tufted towards apex, terminal joint moderate or long, pointed, slender or thickened in front with rough scales. Maxillary palpi obsolete. Posterior tibiæ sometimes partially rough-haired above, outer spurs one-half to two-thirds of inner. Fore wings six-cleft, cell very short; veins 5 and 6 absent, 7 separate, 9 and 10 absent, 11 separate or out of 8. Hind wings six-cleft, cell very short; vein 5 absent, 6 out of 7, 8 free, approximated to 7.

This genus appears to be principally developed in Europe, Africa, and Australia, but is not of any great extent; stray species are also known from North and South America, and it is likely enough that others will be found there, as the species are inconspicuous and easily overlooked.

zonodactyla, Z.
dodecadactyla, Hb.
palodactyla, Z.
grammodactyla, Z.
**perittodactyla*, Stgr.
desmodactyla, Z.
hexadactyla, L.
Huebneri, Wallgr.
**cymatodactyla*, Z.

Appendix.

The following species, which are unknown to me, I have not ventured to classify; they may be referable to *Pyrausta*.

**amasialis*, Stgr.
**pauperalis*, Stgr.
**gutturalis*, Stgr.

Explanation of Plate XV.

Fig. 1. Fore wing of *Aglossa pinguinalis*, showing veins numbered.
2. Fore wing of *Eurrhypara urticata*.
3. ,, *Sclerocona acutella*.
4. ,, *Stenoptilia pterodactyla*.
5. ,, *Crasimetis brachydactyla*.
6. ,, *Pterophorus spilodactylus*.
7. ,, *Agdistis Bennetii*.
8. ,, *Orneodes hexadactyla*.
9. Hind wing of *Aglossa pinguinalis*, showing veins numbered.
10. Hind wing of *Eurrhypara urticata*.
11. ,, *Talis quercella*.
12. ,, *Stenoptilia pterodactyla*.
13. ,, *Pterophorus spilodactylus*.
14. ,, *Agdistis Bennetii*.
15. ,, *Orneodes hexadactyla*.
16. Labial palpus of *Pyrausta repandalis*.
17. ,, *Scoparia lætella*.
18. ,, *Metaxmeste schrankiana*.
19. ,, *Pleuroptya aurantiacalis*.
20. ,, *Notarcha multilinealis*.
21. ,, *Satanastra argyria*.
22. ,, *Agrotera nemoralis*.
23. ,, *Stericta inimica*.
24. ,, *Synaphe consecratalis*.
25. ,, *Acropentias obtusalis*.
26. Maxillary palpus of *Pyrausta repandalis*.
27. ,, ,, *Mecyna polygonalis*.

Fig. 28. Frontal projection (from above) of *Titanio pentodontalis.*
29. ,, ,, ,, *T. normalis.*
30. ,, ,, ,, *Metasia suppandalis.*
31. ,, ,, ,, *Loxostege Eversmanni.*
32. Frontal projection (lateral view) of *Cornifrons ulceratalis.*